"A CLINICAL EVALUATION OF *ELISEVI KUDINEER* A SIDDHA DRUG IN THE TREATMENT OF *KEERINOI* (Threadworm – Enterobius vermicularis) IN CHILDREN"

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DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation entitled **"**A **CLINICAL EVALUATION OF *ELISEVI KUDINEER* A SIDDHA DRUG IN THE TREATMENT OF *KEERINOI (Thread worm – Enterobius vermicularis)* IN CHILDREN"**is a bonafide and genuine research work carried out by me under the guidance of **Dr.A.M.AMALA HAZEL M.D(S).,**Department of Kuzhanthai Maruthuvam, National Institute of Siddha, Chennai - 47, and the dissertation has not formed the basis for the award of any Degree, Diploma, Fellowship or other similar title.

Date: **Signature of the Candidate**

Place: Chennai-47 (Dr.L.Elamathi.)

CERTIFICATE

This is to certify that this dissertation work on **"**A **CLINICAL EVALUATION OF *ELISEVI KUDINEER* A SIDDHA DRUG IN THE TREATMENT OF *KEERINOI (Thread worm – Enterobius vermicularis)* IN CHILDREN"** has been carried out by **Dr.L.ELAMATHI**, Reg No.321314202 during the year 2013-2016 in the Department of Kuzhanthai Maruthuvam, National Institute of Siddha, Tambaram Sanatorium, Chennai under my guidance in partial fulfillment of regulation laid by The Tamilnadu Dr.M.G.R Medical University, Chennai for the final M.D (Siddha), Branch IV –KUZHANTHAI MARUTHUVAM Examination to be held in OCTOBER – 2016. This dissertation work is not reprinted or reproduced from the previous dissertation work.

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CONTENTS

Introduction

1.INTRODUCTION

The country of Happiness is one which is free from suffering. Suffering may be due to internal or external factors. Without removing suffering , one cannot achieve happiness . Prevention , cure and contentment are the three components of medical science which are the means for healthy and happy living .

Siddha is one of the ancient traditional system of Indian medicine. The Siddha system of medicine is scientifically unique art of healing. It is an integrated part of Indian system of medicine which is very potent. The siddha system of medicine is one among the foremost of all other medical system of the world.

The concepts of the siddha as revealed by the Siddhars is that all the living and non-living things are a combination of five primordial elements (Mann, Neer, Thee, Vali, Vin). To regulate the living body easily, the Sidhars concised the five primordial elements into Mukkutrams or Humors (Vali, Azhal, Iyyam). When Mukkutram are in normal equilibrium, a person enjoys the best of health. But when his equilibrium is lost, it is called Disease. This has been mentioned by Thiruvalluvar as,

"மிகினும் குறையினும் நோய்செய்யும் நூலோர்

வளிமுதலா வெண்ணிய மூன்று

Health status of children in a nation is highly reliable index of health of its population. School going children contributes around 40 % of total paediatric population and suffer the highest infection ratio and worm burden that attribute to poor sanitation and hygiene. They are vulnerable to infection and in need to be protected and educated.

School age children have not received as much attention from the health providers as under five. In India, several studies have been carried out on the health status of school age children. These have largely been quantitative and reported morbidity included malnutrition (10.0 - 98.0 %) worm infestation (2.0 – 30.0 %) and anemia (4.0 – 15.0 %)

Worm infestation is one of the common cause of suffering by human being. Small children are particularly prone because they play in the mud and dirt, suck their fingers, eat soil, run barefoot outdoors and some times have less than ideal toilet hygiene. Impure water, low socio-economic state, poor sanitation coupled with low literacy rates of parents particularly, the mothers, are the main causes of this prevalent malady.

Lack of knowledge on hygiene and malnutrition in general public has contributed largely to the factors for Nonachievement of “Health for all by 2000 AD”. Eventhough under five mortality has come down to 93, morbidity is on raise mainly due to malnutrition which is the major cause for under 5 mortality. Malnutrition under 5 under are mainly because of the cause worm infestation

Medicine in the prehistoric times was intermingled with superstition, religion, magic and witch craft. Hygiene was given an important place in ancient Indian medicine. The history of herbal medicine is almost as old as human civilization.The plants are known to provide a rich source of botanical anthelmintics, antibacterials and insecticides

Anthelmintic that are obtained from the natural resources may play an important role in the treatment of worm infestation with less side effects.Ideally an anthelmintic agent should have broad spectrum of action , high percentage of cure with a single therapeutic dose , free from toxicity to the host and should be cost effective , none of the synthetic drug meets the requirement. Even the most common drugs may results in nausea, intestinal disturbances and giddiness , resistance of the parasite to existing drug and their high cost warrants the search for newer anthelmintic molecules.

The drug Elisevi kudineer indicated for Keeri Noi, which may satisfy the drug need to treat the children safely and worth in fulfilling the requirements of anthelmintics . The clinical trial of the drug has not been done so far. So the study may help to step one stone up in the journey of Siddha treatment in children.

Aim and Objectives

2.AIM AND OBJECTIVES

AIM:

To Evaluate the efficacy of ELISEVI KUDINEER for the management of KEERINOI (Thread worm- Enterobius vermicularis)

PRIMARY OBJECTIVE:

To study the recurrence rate of the disease after giving the trial drug.

SECONDARY OBJECTIVES:

To review the literature of the disease Keerinoi in Siddha and Modern aspect.

To compare the aetiology, incidence, clinical features, treatment, prognosis and complications of Keerinoi with Thread worm (Enterobius vermicularis) in Modern Science.

To know the predominance of disease age, sex, climate, immunization history and socio economic status are considered.

To Study the Keerinoi on the basis of siddha parameters such as deranged mukkuttram, poripulangal, ezhu udalkattukal and envagai thervugal.

To study the pharmacological activity, physico chemical analysis ,and chemical analysis of the trial drug.

Review of literature

3.REVIEW OF LITERATURE

3.a. SIDDHA ASPECT

கீரிப்பூச்சி

கிருமி

மனித உடலில் சாதாரணமாய் வசிக்கும் மற்றும் நோய்களை உண்டாக்க கூடிய காரணிகளே கிருமிகள் (அ) பூச்சிகள் எனப்படும்.

கிருமி நோய்

நாக்குப்பூச்சி, கீரிப்பூச்சி, புழு முதலியன மனித உடம்பில் உள்ள கருவி கரணங்களில் உற்பத்தியாகி அவ்விடத்திலுள்ள தசை இரத்தம் முதலிய தாதுக்களை கொண்டு சீவிப்பதால் அநேக நோய்கள் ஏற்படும். இவை அநேக காரணங்களை முன்னிட்டு உடம்பில் உண்டாகும் பித்தம் (அ) சிலேற்பன ஆதிக்கத்தினால் பிறக்கும். இதனால் உடம்பு நிறம் மாறி, வயிறு வலித்து, மார்பு எடுப்பாக தோன்றி மந்தம், அன்னத்துவேசம், பிரமை முதலிய குறிகள் ஏற்படும். சோகை, மஞ்சள் காமாலை, யானைக்கால், உடலிளைப்பு, வலிப்பு, சுரம், ஈரல் வலி முதலியன இவைகளால் உண்டாக்கும்.

குடற்கிருமி

மனித உடம்பில் குடலில் சாதாரணமாய் வசிக்கும் மூன்று வித கிருமிகள், the three common varieties of worms infesting the human intestines viz.

நாடாப் பூச்சி	-	Tape worm
நாக்குளிப் பூச்சி	-	Round worm
கீரைப் பாம்பு	-	Thread worm or maw-worm

கீரி நோய்

குடலிற் தங்கிய கீரிப் பூச்சிகளினால் குழந்தைகட்கு ஏற்படும் நோய், a disease in children arising from the worms in the intestine. - T.V. சாம்பசிவம் பிள்ளை அகராதி

"அரவத்திருடி யதன் மேலே பரவியழிக்கும் மான்புழு போல்
வருவெண் கீர வடிவுருக்கள் பெருகும் நோயின் பெயர் கரி
கீரமாம் உருகிளறும் மகவினை வீரக்கண்கள் விரண்டு நகுல்விழி
கூரழுச்சினக் கூண்டிலடித்துமே கீரக் குத்திக் கழிவதால் கீரிநோய்"

- மதலை நோய் தொகுதி- 1

கிருமிகள் உண்டாகும் விதம்

அகக்காரணம்,

புறக்காரணங்களால் உண்டாகின்றன

அகக்காரணம்

உடற்குள் பக்குவாசத்தையும், குடலையும் பற்றி பூநாகம், தட்டைபுழு, நெல் முளை கிருமி, (கொக்கி புழு), சன்னக்கிருமி, வெண்மைக்கிருமி, செம்மைக்கிருமி, என்ற பலவிதக் கிருமிகளும், கெர்பப்புழு, திமிர்ப்பூச்சி முதலிய கிருமிகளும் உண்டாக்கும். இவை மலத்தைப் பற்றியும் உண்டாகும் என்பர். மலம் , சிறுநீர், இரத்தம், சுக்கிலம், சீழ், சளி, வியர்வை இவற்றிலும் உற்பத்தியாகும்.

புறக்காரணம்

இது உடலில் அசுத்தத்தையும், அழுக்கையும் காரணமாக கொண்டு உண்டாகும் என்பர்.(நோய் நாடல் நோய் முதல் நாடல் திரட்டு)

கிருமி நிதானம்

“கிருமி உற்பத்தி தன்னை கிருபையாய் சொல்லக் கேளு

விருது சேர் கபம் ரெத்தம் விளமெய்யில் அழுக்கு பற்றல்

கிருபையாய் மலமின்னாலில் கிருமி உற்பத்தியாகும்திரும்பியே

இதனை நீயும் நேர்ந்திடும் வரலாறு கேளே”

உடலில் கிருமி தோன்ற காரணம் கபம், இரத்தம் இவற்றில் அழுக்குச் சேர்வதால் ஆகும்.

கிருமி உண்டாகும் காரணம்

“அன்னம் தான் தெகி யாதாலே அடிக்கடி தின்ற தாலும்

இன்னும் தான் புளிப் பினிப்பு இடைமீறி அருந்தினாலும்

பண்ணுமு தான் பகலுறக்கம் வியாயாமம் செய்யாதாலும்

உன்னுதான் மா பதார்த்தம் உடன் மச்சம் அதிகம் தின்றால்

தின்தோர் இலைக்கறிகள் திடமுடன் உளுந்து தின்னால்

நின்தோர் மாமிசம் பாலு நிறை மீறி தயிரு வர்க்கம்

கன்றதோர் கணக்கில் மிஞ்சில் கபகிருமி உண்டாம் பாரு

மென்றதோர் தெகியா பண்டம் மீறிடில் ரெத்த கிருமி’

- மதலை நோய் தொகுதி-1

உடலில் கிருமி தோன்ற காரணம் உணவு செரியாமை, அடிக்கடி உணவு உண்பதாலும், புளிப்பு இனிப்பு சுவையுடைய உணவுகளை அதிகளவு உண்பதாலும், பகலில் உறங்குவதால், மாப்பண்டங்களுடன் மீன் உன்பதால். பால்,மாமிசம்,தயிர் அளவுக்கு அதிகமாக உண்பதால் உண்டாகும்.

கிருமி வகைகள்

According to **T.V.SAMBHASIVAM PILLAI AGARATHI**

உடம்பிற்குள் காணப்படும் அநேக விதமான புழு (அ) பூச்சிகள்

Worms/Parasites of various shapes which germinates or grow in a living organism in the different parts of the human body. The different kinds that have their origin in feaces, phlegm, Blood etc. are

பெரும்பூநாக கிருமி	-	Nematode
நீரப்பாம்பு கிருமி	-	an unknown kind
நெல்முளை கிருமி	-	Hook worm
சன்னநீளக் கிருமி	-	Filarial
அணுக் கிருமி	-	Microbe
வெண் கிருமி	-	Thread worm
செங்கிருமி	-	Red worm
அந்தர்மல கிருமி	-	Worms of rectum, Oxyuris vermicularis
வட்ட கிருமி	-	Round worm, Ascaris lumbricoids
காலில்லா கிருமி	-	Worms without legs for locomotion
சூக்கும கிருமி	-	Microzoan
தோன்றா கிருமி	-	Invisible worm
இரத்த கிருமி	-	Worms of blood
நீரக கிருமி	-	Water worm/germs
மஞ்சட் கிருமி	-	Ochromyia
வாற் கிருமி	-	Flagellated worm
கருங்கிருமி	-	Black coloured germ

மண்டை கிருமி	-	Worms in the head
சூரைக் கிருமி	-	an unknown kind
சுரோணிதக் கிருமி	-	a germ cell
துலக் கிருமி	-	water worm
கணக் கிருமி	-	germ responsible form kanam
தாதுக் கிருமி	-	germ concerned in the increase or vitality
வாய் கிருமி	-	worms found in the teeth, saliva etc.,
சூதகக் கிருமி	-	germ cell
புனக்கிருமி	-	an unknown kind
சூலைக் கிருமி	-	microbe of rheumatism or colic
சுக்கிலக்கிருமி	-	spermatozoa
வயிற்றுக் கிருமி	-	germs in the stomach
குடற் கிருமி	-	intestinal worms such as, tapeworm etc.,
ஈரற்கிருமி	-	liver flukes

According to JEEVA RATCHAMIRDHAM

இதில் 20 வகையான கிருமிகளைப் பற்றியும் அவைகள் வசிக்கும் இடபேதங்களினால் 4 வகையாகவும் கூறப்பட்டுள்ளது. அவை

சரீரத்தில் மேல் இருப்பன

கபத்தில் இருப்பன

இரத்தத்தில் இருப்பன

மலத்தில் இருப்பன

According to BALAVAGADAM

இதில் 3 வகையான கிருமிகளை பற்றி கூறப்பட்டுள்ளது. அவை

மசரைப்புழு

கீரிப்பூச்சி

நாகப்பூச்சி

According to MADHALAI NOI THOGUTHI-1

Kirumi is of four types. They are

Vatha Kirumi

Pitha Kirumi

Kaba Kirumi

Ratha Kirumi

கீரிநோய் தொகை

“நோய் கீரிவுருக்களதால் பிணிகள் நான்கு

நொந்தி டறுஞ்சிறுகீரி மயக்குகீரி

பேய்க்கீரி பெருங்கீரியிவைகள் தன்னில்

பெருமூச்சாம் பெருங்கீரி யேழிற் கொல்லும்

தாய் போன்று போற்றலுறில் பதினெட்டின் மேல்

சாகாது மீண்டு வரும் மயக்குக் கீரி

காய்வின்றி விலாவடிக்கும் பேயாங்கியரி

கருகலுறு சிறுநோயீரெட்டுள் மீளும்”

வகைகள் நான்கு

சிறுகீரி

பேய்க்கீரி

மயக்குக்கீரி

பெருங்கீரி

சிறுகீரி குணம்

“மீளுமே சிறுகீரி மகவினுந்தி

மிக நுட்ப வுருவுற்று அறையுட் தங்கி

ஆளுமே கண்சிவந்து அலறிச் சீறும்

அடிக்கடியே மலஞ்சீழும் குருதி போகும்

மூளுமே காய்ச்சலதாய் சிறுநீர் கட்டும்

முரண்பாடாய் தலைதாழ்ந்து வயறு குத்தும்

சூளுமே யுப்பிசம்போல் மேனி நாறும்

சுறுக்காக யூரெட்டுள் மருந்தால் தீரும்.”

குறிகுணம்:

கண் சிவப்பு

அலறல்

அடிக்கடி மலம் சீழாக கழிதல்

காய்ச்சல், நீர் கட்டு, வயிற்றுவலி உண்டாகும்.

பேய்கீரி குணம்

“போமே மலமுஞ் சீழ்குத்தி புரண்டே புலம்பும் வலி மிகுந்து

தாமே காயும் தடுமாறும் தழலாம் வயிறு பிசைந்து வரும்

ஆமே கரங்கள் விலாவடிக்கும் அடங்கா முறையுலெழுந்தோடும்

நோமே கீரிப்புழு குடலுள் நொய்க்கும் பேயாங்கீரி யிதே”

குறிகுணம்

மலமும் சீழும் போகும்

உடல் காயும்

வயிற்று வலி உண்டாகும.

மயக்குக்கீரி குணம்

“நொந்துமே யுளைந்து குத்தியுந்தி தன்னில்

நோயுற்று மலஞ் சீழங் குருதி சிந்தி

வந்துமே கால் முழைத்து தொடி போற்காணும்

வயுறதுவும் முரடிக்கும் மயக்குஞ் சீறும்

குந்தலதாயீர் கையும் அறையும் நெஞ்சில்

குறுகலின்றி மலவாயும் விரிந்து தள்ளும்

சந்துகால் துடையுளையும் மயக்குக்கீரி

சார் பதினெண் நாள் தாண்டில் நலமாங்காணே”

குறிகுணம்

வயிற்றுவலி

மலம் சீழும் குருதியுமாக போகும்

கால் வலி

வயிறு ஊதும்.

மூட்டு வலி உண்டாகும்.

பெருங்கீரி குணம்

“வந்து வயிறு பொருமலுடனுளைந்து நொந்து

வன்மூச்சு திலை வலியுள் குத்து காய்ச்சல்

பந்து எனப்புரண்டுருண்டு மலநீர் சிந்தி

படுமிரைச்சல் சளி சோரை மிகுதி சாய்ந்து

நொந்து விலாநெஞ்சடித்து கதறிச் சீறி

நுண் கீரிப்புழுக்களுற்று உந்துமூலம்

குந்துமளவே விரிந்து கக்கல் விக்கல்

குறிகாணும் பெருங்கீரியேழில் மாள்வாம்”

குறிகுணம்

வயிற்று பொருமல்

வயிற்று வலி

காய்ச்சல,இரைச்சல்,சளி காணும்.

நோய் வரும் வழி

தூய்மையற்ற மலம் கலந்த மண்ணில் விளையாடுவதாலும், மண்ணை தின்பதாலும், ஈ மொய்த்த பண்டங்கள், தூய்மையற்ற உணவு, காய்கறிகள், பழங்கள் ஆகியவை உண்பதாலும், மிகுதியான இனிப்பு வகைகளை உண்பதாலும், கெட்டுபோன தயிர், பழைய சாதம், அழுகிய காய்கறிகள், பழங்கள் இவற்றை உண்பதாலும், பன்றி இறைச்சி, மாட்டு இறைச்சியாலும் சில மீன் வகைகளை உண்பதாலும், நாயுடன் நெருக்கமாக பழகுவதாலும் குடல் கிருமிகள் உண்டாகின்றன. மேலும் சில பூச்சிகள் ஆசன பகுதியில் முட்டை இடுகின்றன. குழந்தையானது ஆசன பகுதியில் அரிக்கும் போது கையினை வைத்துச் சுரண்டுகிறது. பிறகு அதே விரலை வாயில் வைத்து சூப்புவதால், நகக் கண்ணிலுள்ள முட்டையானது குழந்தையின் உணவுப் பாதையில் சென்று பரவுகிறது.

-பிள்ளைப்பிணி மருத்துவம்

“பாலுண வின் பொருட்களொடு பழ நீருப்பு
பற்றியடர் ஊன் நருகுறைதலாலும்
காலுகளனி இடற்சியினால் மலத்தூள் தன்னால்
கனிந்த கனியன்னையூண் சேற்கை வெப்பால்
பாலூட்டி வளற்குங்கோள் நீர்க் குற்றத்தால்
பற்றி நிலம் மாறுகின்ற சீதவெப்பால்
மேலூன்றும் உடற்நிலை மாறுபட்டு
மெலிந்திடறு செய்கீரி வுருக்கல் தோற்றும்”

- மதலை நோய் தொகுதி-1

பால் உணவு உண்பதால், வாயுக்களின் இடப் பெயர்ச்சியினால், அதிகம் பழுத்த பழம் உண்பதால், இயற்கையின் சீத வெப்ப மாற்றத்தால் கிருமி உண்டாகும்.

கீரி நோய் குறிகுணம்

“மஞ்சடை மதலை தானும் மருவிடும் பால்பா லாக
மிஞ்சியே வயிற்றிற் பூச்சி மேனியும் மலைத்து காட்டும்
நெஞ்சொடு விரைவிற் றட்டி நெறிகட்டு பேசு மாகில்
அஞ்சவே கீரி நோயென் றறிந்துகொள் ளழகு மாதே”

குழந்தையின் வயிற்றில் கீரிப்புழு இருந்தால் அடிக்கடி பால்போலச் சிக்கிக் கழிதல், உடம்பு இளைத்துக் காட்டுதல், மார்பிலும் விலாவிலும் கட்டிக் கொண்டு அறிவு மாறிப் பேசல் என்னும் குறிகுணங்கள் காணப்பட்டால் குழந்தையின் வயிற்றில் கீரிப்புழு இருக்கிறது என அறியலாம்.

-பாலவாகடம்.

கீரி நோயின் குறிகுணம்

“கிளைப்பெரு மானே கேளாய்
கீரிநோய் குணத்தை சொல்ல
உளைந்திடும் வலிக்கு மங்கே
உடல்மலங் கருகிச் சீதம்
விளைந்திடும் மிகவே நின்று
வெண்குத வாயைச் சூழ்ந்து
கழிந்திடும் கழிப்புக் காட்டும்
கணசுரம் காட்டு மென்றே
காய்ந்திடும் கமுந்து வாங்கும்
கண்ணினில் பீளை சாடு
முயந்திடும் முதுகு மேனி
யொண்ணுநீர் வெண்ணீ ராகும்
தேய்ந்திடும் குளவி தானும்
திறங்கெடு மிவைகள் தீர

வாய்ந்திடும் மருந்து தன்னை

யடவதாய் சொல்லக் கேளே

கொஞ்சியும் நெஞ்சொ டுங்கி

குளைந்ததோ ரிழைப்புக் காட்டி

நெஞ்சொடு விலாவொ டுங்கி

நேரிதாய் மேனி வாடி

செஞ்சியில் மானே பிள்ளை

சீரிமெத் தழுது காட்ட்ம்

மஞ்சவே கீரி நோயென்

றறிந்தவ ருரைத்த வாறே”

கீரிப்புழு இருந்தால் வயிறு வலிக்கும். உடலும் வலிக்கும், மெலியும், சீதம் விழும், மலம் கருகும், குதத்தை சுற்றி அதிகமான கடுப்பு ஏற்படும். சுரம் காயும். கண்ணில் பீளை ஏற்படும்.உடலில் இருக்கும் நீர் வென்னீர் போலாகிவிடும். குழந்தையின் நெஞ்சு ஒடுங்கிவிடும்.இளைப்பு ஏற்படும்.நெஞ்சும் விலாவும் ஒடுங்கும். குழந்தை சீறி அழும். குழந்தை வயிற்றில் கீரிப்புழு இருந்தால் அடிக்கடி பால் போலச் சிக்கி கழிதல், உடம்பு இளைத்து காட்டுதல், மார்பிலும் விலாவிலும் நெறி கட்டிக் கொண்டு அறிவு மாறிப் பேசல் என்னும் குறிகுணங்கள் இருக்கும்.

-பிள்ளைப்பிணி மருத்துவம்

கீரி நோய்

“வரி எழு அழகுடைய மாதுகேள் கீரிநோய் வளமையது தெளிவாகவே

வளமான நெஞ்சுடனிருவிலா வலியுறும் சுழியுமயர்வாகும் ஈளை

தரியாதுடல் மெலியும் சீறியெழமுடலது குன்றி வாயுடனே மெலியும்

தப்பாமலே மலம் கருகுமிது மூலமும் வாயுடனே புண்ணுமெழுமே

அரிய சளியேவிழும் கண்டணிணில் பீளையும் முதுகதுவளையும்

உன்னியகலாது வென்னீரிலசையது மிஞ்சுமே கருகியனி வறளுமுடலு
பிரியமொடு குறுமுனி பேசு முன்னுரையது தவறாது குறையாகவே
செப்பினேன் செந்தமிழ் ஆசையுடனேயிது காசினியறிய வென்றே”

- கும்பமுனி பாலவாகடம்

குறிகுணம்:

நெஞ்சு வலி
விலா வலி
அயர்வு
ஈளை
உடல் மெலிவு
மலம் கருகும்
மூலம்,
வாய்ப்புண்,

கீரி நோயிலக்கணம்

“தோற்றமாஞ் சேய் மதலைமகவுடம்பில்
சொற்காய்ச்சல் கண் சிவப்பு குடலிற் குத்து
ஊற்று நீர் போக்கெனவே நாசியூறல்
உளைந்து குத்தி வயறிரைந்து சளி சீழ் சாய்தல்
கூற்றன்றிகழ் மூச்சிடறும் குருதி வீழும்
குறையாமலிரு சுரமும் விலாவில் மோதும்
ஆற்றுநீர் போல் வியர்வை மூலந்தள்ளும்
அயர் கக்கல் விக்கலதாம் கீரி நோயே.”

குறிகுணம்:

காய்ச்சல்,கண் சிவப்பு,வயிற்று வலி,சளி,மூச்சு விட சிரமம்,சுரம்,வியர்வை விக்கல் உண்டாகும்.

- மதலை நோய் தொகுதி- 1

கிருமியால் வரும் நோய்கள்

According to GURUNAADI

குருநாடி நூலில் கூறியுள்ளபடி கிருமியால் வரும் நோய்கள்

“கிருமியால் வந்ததோடம் பெருகவுண்டு

கேட்கலதின் பிரிவதனைக் கிரமமாக

பொருமிவரும் வாய்வெல்லாங் கிருமியாலே

புழுக்கடிபோல் காணுமது கிருமியாலே

செருமிவரும் பவுத்திரங்கள் கிருமியாலே

தேகமதில் சோகை குட்டங் கிருமியாலே

துருமி வருஞ் சுரோணிதங் கிருமியாலே

சூட்சமுடன் கிரிகைப்பால் தொழில் செய்வீரே”

- குருநாடி

பொருள்

கிருமிகள் பெருகும் பொழுது பொருமல், வாய்வு, புழுக்கடி, பவுத்திரம், சோகை, குட்டம், சுக்கிலபிரமேகம் ஆகிய ரோகங்கள் ஏற்படுவதுண்டு. அன்றியும் குன்மம், சயரோகம், சுரம், பாண்டு, பெருவயிறு, விடகரப்பான், விடநீர்சூலை, சுக்கிலநட்டம் இவற்றால் தாதுக்கள் கெட்டுத் தடிப்புண்டாகும். அதில் கிருமியுண்டாய் விடநீர் தேகமெல்லாம் பரவி, குழிகுழியாய் புள்ளி புள்ளியாய் கிருமிவிடநீரால் குட்டம், விடகரப்பான் உற்பத்தியாகும்.

According to RATHNA SURUKKA NAADI

கிருமியால் உண்டாகும் நோய்கள் முக்கியமாய் ஆறு வகை என இரத்தின சுருக்க நாடியில் கூறப்பட்டுள்ளது. அவை

1.வயிற்றுப் பொருமல்

2.புழுக்கடி

3.பவுத்திரம்

4.சோகை

5.குட்டம்

6.சுக்கில பிரமேகம்

தன்வந்திரி வைத்திய நூலில் கிருமிகளின் தேர்வுக்குறிகளைப் பற்றி கூறும்பொழுது

"வலித்துடும் மலம் விடாதே நாடோறுந் தங்கி மாங்கே
கலித்திடுஞ் சில புகுத்தான் காயத்தை மிகக் கெடுக்க
மயான மட்டும் நசநச வென்றறிந்து தோவா
மலத்தினிற் கிருமி தேர்வுமிவை யென வகுக்கலாமே."

வயிற்றுள் வாயு உண்டாகி தினந்தோறும் மலம் போகாமல் குடலில் தங்கும்.சிறுசிறு புழுக்கள் சேர்ந்து உடலை வருத்தும்.ஆசன வாயில் நச நசவென்று அரிப்பை தந்து வலியையும் கொடுக்கும். இவை கிருமி நோய்க்குறிகள் ஆகும். -தன்வந்திரி வைத்தியம்

தீரும் குறிகுணங்கள்

"வயிறதனிற் பூநாகத்தனை சார்ந்து
வருத்தியது புற்றுபோல பற்றி காணும்
எழும்பியது கிருமிதாணிடைந்து புக்கில்
இயல் பெருகுங்குழல் மடவாய் சொல்லக்கேளு
கயிறு முறுக்கிவிட்டாற் போல தேகந்தன்னில்
சுறசுறத்து சொறியாகிக் காணும் சீழ்நீர்
உயிர் பெருகும் பண்டிதரே கரப்பான் செய்யும்
உறுதி தன்ன நன்றாக ஊரணிப்பாரே"

குறிகுணம்

சொறி காணல்

சீழ் வடிந்து கரப்பான் போல் காணல் ஆகியவை தீரும் குறிகுணங்களாகும்.

-குருநாடி

“பேச்சை இனிகேள் பெருவயிறும் கொப்புழும்

காய்ச்சலும் வோக்காளம் கக்குமே- மேய்ச்சலற

பூச்சியது நாகமாம் பூவையே நீயறிந்து

நீச்சறவே வைமருந்தை தேர்”

குறிகுணம்

பெறுவயிறு,

காய்ச்சல்,

ஒக்காளம் ஆகிய குறிகுணங்கள் கண்டால் தீரும்.

-பால வாகடம் செய்யுள்.

தீரா குறிகுணங்கள்

“புழு வாந்தி குறிகள் புகழக்கேண்மோ

வளி முதல் மூன்றும் வகையாகத் தனித்தனி

மிகுதலினாலும் விரவுவதாலும்

அகட்டில் மார்பில் அடைத்து மலத்தில்

புழுக்கள் மிக்காய் புழுந்து நெளிந்து

வயிறு வலித்தல் விக்கலுடன் நடுக்கல்

செயிறுற மார்பில் நோய் துடித்தல்

சோபை மிகுதல் கொண்டு வாந்தி

வீழலாகும் அதனிற் புழுக்கள்

வெளியா மென்று விளம்பினாரன்றே”

குறிகுணம்

வாதம் மூன்றும் தனி தனியாக மிகுவதால் மார்படைப்பு, மலத்தில் அதிக புழு காணல், வயிற்று வலி, விக்கல், நடுக்கல், சோபை மிகுதல், வாந்தியில் புழு வருதல் ஆகிய குறிகுணங்கள் கண்டால் தீராது

-சித்த மருத்துவாங்கச் சுருக்கம்

பிணியறிமுறைமை- நோய் கணிப்பு

Piniyari muraimai is a method of diagnosing a disease. This is based upon three main principles and Envagai thervugal. The three main principles are

பொறியால் அறிதல் - Inspection

புலனால் அறிதல் - Palpation

வினாதல் - Interrogation

Physicians- "Pori" and Pulan are used as tools to examine the Pori, Pulan of the patients

Poriyalarithal

Pori is considered as five sense organ of perception namely

Nose

Tongue

Eye

Skin

Ear

Pulanal arithal

Pulan is functions of five sense organ. They are

Smell

Taste

Vision

Sensation of taste

Hearing

Vinathal (Interrogation)

Vinathal, asking the information of the history of the disease, clinical feature etc., from the patient or from his close relatives who is taking care of him

Enn vagai thervu

The diagnostic value of envagai thervugal is definite one in Siddha system and presence of vital dhoshas in the patients they are described in Siddha maruthuvangam as an essential one for the Siddha physician

“நாடி பரிசம் நாநிறம் மொழி விழி
மலம் மூத்திரமிவை மருத்துவராயுதம்
மெய்க்குறி நிறம் தொனி விழிநா
இரு மலம் கைக்குறி” -தேரையர்

“தொடுகலுற்ற அட்டவித பரீட்சை தன்னை
துலக்குமுறும் பண்டிதரே தெளிவதாக
பகுக்கரிய நாடியை நீ பிடித்துப்பாரு
பார்கின்ற வார்த்தையைப்பார் நாவைப்பாரு
வகுக்குரிய தேகமெனத் தொட்டுப்பாரு
வளமான சரீரத்தின் நிறத்தைப்பாரு
சகிக்கரிய மலத்தைப்பார் சலத்தைப்பாரு
சார்ந்த விழிதனைப் பார்த்து தெளிவாய்க்கானே”

-அகத்தியர் வைத்திய வல்லாதி 600

Naadi

Naadi in Keeri noi is given as Vatha Naadi

“வாதமெனும் நாடியது தோன்றில்
சீதமந்தமொடு வயிறு பொருமல் திரட்சி வாய்வு
சீதமுறுங்கிராணி மகோதரம் நீராமை
திரள்வாய்வு சூலை வலிக்கடுப்புத் தீரை
நீதமுறுங்கி ருமிகுன்மம் அண்டவாதம்
நிலையும் நீர்க் கிரிச்சரங்கள் தந்து மேகம்
பேதகமா முதரபிணி மூலரோகம்
பேசவெகுபிணிகளுமே பொருளதாமே”

(சதக நாடி)

Sparism

Sparism is a method of palpation by which warmth, chilness, dryness, roughness of skin, ulcer may be noted in Keeri Noi

Naa

The method of inspection of the tongue mainly gums, teeth, lips palate etc., Pallor of tongue may be noted.

Niram

Colour indicating the vatha, pitha, kaba, mukkutram, pallor, redness of the skin, pallor of the skin, conjunctiva, nail beds may be noted

Mozhi

It includes the clarity of voice, speech, voice slurring, crying are noted

Vizhi

Abnormal colour changes indicating the three doshas, pallor, excessive lacrimation accumulation of secretion at the angles of eyes, subconjunctival bleeding, any specific disease of the eyes are noted

Malam

“கருத்தமலம் பந்தமலங் காலாகும் பித்தஞ்
சிறுத்தமுஷ் ணஞ்செம்மை சேரும்- வருத்தமுறை
சீதமலம்வெண்மையாம் செர்ந்தபல ரோகியி
ஏதமல மெந்நிற மே
மலமது கட்டி முட்டியாயிடும் வாதத்திற்கு
மலமது தம்பலம்போல் மஞ்சளாம் பித்தத்திற்கு
வலமறச் சிக்கலாக வெளுத்திடு மையத்திற்கு
மலமதின் லட்சணத்தை வகுத்தனர் முனிவர் தாமே”

-புலிப்பாணி

Colour, forth, Abnormal consistency is noted

Moothiram

Quantity, colour, odour, forth, frequency, retention, deposits, presence of abnormal constituent such as sugar, protein etc., are noted

“அருந்து மாறிரதமும் அவிரோதமதாய்

அஃகல் அலர்தல் அகாலவூண் தவிர்ந்தழற்

குற்றள வருத்தி உறங்கி வைகறை

ஆடிகலசத் தாவியே காது பெய்

தொரு முகூர்த்தக் கலைகுட் படுநீரின்

நிறக்குறி நெய்குறி நீருமிதத்தல் கடனே”

- நோய் நாடல் நோய் முதல் நாடல் திரட்டு

After waking up in the morning, the first voided urine is collected in a wide mouthed glass container and is subjected to the analysis within one and half hours.

Neerkuri

“வந்த நீர்க்கரிஎடை மணம் நுரை எஞ்சலென்

றைந்தியலுளவை யறைகுது முறையே”

- சித்த மருத்துவாங்க சுருக்கம்

Voided urine has the following characters

Niram (Colour), Edai (Specific gravity), Manam (Smell), Nurai (Frothy Nature), Enjal (Quantity)

Neikkuri

The specimen collected for neikkuri is kept open in a glass dish being exposed well to the sunlight. Add one drop of gingili oil without shaking. It should not be disturbed from its position and spreading of the oil drop should be observed keenly the direction in which it spreads within few seconds and conclude the diagnosis as follows

“அரவென நீண்டின் ஃதே வாதம்

ஆழி போற்பரவின் அஃதே பித்தம்

முத்தொத்து நிற்கின் மொழிவதென்கபமே”

- நோய் நாடல் நோய் முதல் நாடல் திரட்டு

எண்ணெய் துளி பாம்பு போல நீண்டால் வாதரோகம் என்றும்

மோதிரம் போல் பரவினால் பித்தம் என்றும்

முத்தொத்து நின்றால் கபம் என்றும் அறியலாம்

Mukkutram

"உற்றதோர் உடலின் கூறு

உறுப்புடன் வீரலி நிற்று

முற்றுமே நோய்கள் எல்லாம்

முதல்தனில் தோன்றும் போது

பற்றுமே வாத பித்த

சிலேற்பனந் தன்னில் ஒன்றையும்

பற்றியே தோன்றும் என்று

பகர்ந்தனர் முனிவர் தாமே"

- அகத்தியர் குருநாடி

Human body is influenced by mukkutram i.e. Vatham, Pitham and Kabam. They are responsible for normal physiological conditions of the body.

Treatment

Treatment is based upon accurate recongestion of aetiology, diagnosis and prognosis of the disease the proper treatment is based on proper diagnosis particularly with a view to the thrithosha pathology before the treatment is given to the patient we have to ascertain whether the disease is curable or rarely curable or incurable. Before starting the actual treatment the deranged thri dhosha is noted to the normal range.

"பேதியால் வாதந் தாழும்

வமனத்தால் பித்தந் தாழும்- நசிய

அஞ்சனத்தால் கபந் தாழும்"

In this disease the unhygienic habits insanitary surrounding, improperly cooked food, lower the resistance of the individual resulting in upsetting the function of the vatha the deranged vatha cases dysfunction of kukkiyanal which permits the multiplication of the intestinal worms in the aamasayam

Pathiyam

During the course of treatment, the drug is administrated to the patients according to the nature of disease and the patients are advised to follow certain restrictions regarding diet and physical activities. This type of medical advice in Siddha system of medicine is termed as Pathiyam. Importance of Pathiyam is quoted as follows.

"பத்தியத்தினாலே பலனுண்டாகம் மருந்து

பத்தியங்கள் போனால் பலன் போகும் – பத்தியத்தில்

பத்தியமே வெற்றிதரும் பண்டிதர்க்கு ஆதலினால்

பத்தியமே உத்தியென்று பார்"

- தேரையர் வெண்பா

The patient with keeri noi was advised to avoid unhygienic foods.

Diet

'மருந்தே உணவு உணவே மருந்து"

-திருமூலர்

"மாறுபாடி ல்லாத உண்டி மறுத்துண்ணின்

ஊறுபா டில்லை உயிர்க்கு"

- திருக்குறள்

என்பதனால் உண்ணும் உணவில் கவனம் கொள்ள வேண்டும்

Good diet is the most important factor to maintain one's health. Good diet is one-which should not affect health by increasing or decreasing the thridhoshas.

In general case of children with kudal kirumi, the diet should be in easily digestable form and should be a nutritional one. The Saaram, Senneer which are easily affected can be corrected by taking Puzhungal arisi, Paal annam, Nei annam, Green leafy vegetables, and fruits. Nel pori and Pori urundai can be taken to avoid Nausea and various digestive problems and quoted in agasthiyar gunavagadam text.

Keerai Vagaigal

Greens like Karisalai, ponnanganni, arukeerai, murungai keerai having haemantinic property may be given daily. In worm infestation agathi keerai, paharkai,chundaivatral, veappilai, pudhina, poondu, venthayam, paruppu keerai are advised.

Kaikarigal & Pazhavakaigal

Kathiri pinju, Avarai pinju, murungai pinju, vazhai kachal may be given along with other food stuffs

Paerichai, Naaval, Maadhulai, Aththi are rich sources for iron which are to be taken.

3.b.MODERN ASPECT (ENTEROBIUS VERMICULARIS)

Intestinal parasites are worms, soft bodied organisms that can infest human and animals. Parasitic worms fall into several different classes and include hook worms, round worms, tapeworms, whipworms, and pinworms. The parasitic infestations are acquired by ingestion, inhalation or penetration of the skin by the infective worms. In India, favorable circumstances exist for high morbidity due to rapid industrialization. Due to open air defecation and added to it the menace of flies and other insects, poor personal cleanliness, habits of barefoot walking and poor disposal system of human excreta, favors worm infestation in children.

Intestinal parasitic infections are amongst the most common infections worldwide. It is estimated that some 3.5 billion people are affected, and that 450 million are ill as a result of these infections, the majority being children. These infections are regarded as serious public health problem, as they cause iron deficiency anemia, growth retardation in children and other physical and mental health problems. In addition, poor sanitary and environmental conditions are known to be relevant in the propagation of this infectious agent.

According to estimates of World Health Organization (WHO), infection with round worm (Ascaris Lumbricoides), whipworm (Trichuris Trichiura), Thread worm (Enterobius vermicularis) and hookworms (Ancylostoma duodenale and Necator americanus) with associated morbidity, affect approximately 250 million, 46 million and 151 million people, respectively. About half the population in South India, and 50 percent of school children in tribal areas of central India, are infected with Ascaris lumbricoides, Enterobius vermicularis, Trichuris trichiura and/or hookworm. The overall prevalence of helminthes infestation in children in India is about 50 percent in urban and 68 percent in rural areas. Helminthic infections are more prevalent among the children. They constitute 12 percent of total disease burden in children.

In children, intestinal parasitic infections, particularly soil-transmitted helminthiasis is a common health problem in tropical countries. Younger children are predisposed to heavy infections with intestinal parasites since their immune systems are not yet fully developed, and they also habitually play in faecally contaminated soil. In addition to considerable mortality and morbidity, infection with intestinal helminthes has been found to profoundly affect a child's mental development, growth and physical fitness while also predisposing children to other infections. Several factors like climatic

conditions, poor sanitation, unsafe drinking water, and lack of toilet facilities are the main contributors to the high prevalence of intestinal parasites.

INTESTINAL PARASITES IN HUMAN HISTORY

During our relatively short history on Earth, humans have acquired an amazing number of parasites, about 300 species of helminth worms and over 70 species of protozoa . (Ashford, R. W., and W. Crewe. 1998. The parasites of *Homo sapiens.* Liverpool School of Tropical Medicine, Liverpool, United Kingdom.) .We are beginning to learn a lot about the past history of parasitic infections from studies of archaeological artifacts, such as the presence of helminth eggs or protozoan cysts in coprolites (fossilized or desiccated feces) and naturally or artificially preserved bodies; from such studies has emerged a new science, palaeoparasitology. Examples of some of these discoveries will be discussed later. So vast is the field of human parasitology, and so many and far-reaching the discoveries made, that it is not possible to do justice to the whole subject. Therefore; only the most significant aspects and the most important parasites are considered under two major headings, the helminth worms and the protozoa.

DISCOVERY OF THE HELMINTHIS WORMS

Because of the large size of some helminths, such as the roundworm *Ascaris* and the tapeworms, it is practically certain that our earliest ancestors must have been aware of these common worms. There is some evidence for this assumption based on contemporary studies of primitive tribes in Sarawak and North Borneo, where Hoeppli found that most people are aware of their intestinal roundworms and tapeworms **(**Hoeppli, R. 1956. The knowledge of parasites and parasitic infections from ancient times to the 17th century. Exp. Parasitol. 5**:**398-419.). Some historians have identified references to helminth worms and their diseases in the Bible, but the relevant passages are open to several interpretations. Among the Egyptian medical papyri, the Ebers papyrus refers to intestinal worms, and these records can be confirmed by the discovery of calcified helminth eggs in mummies dating from 1200 BC. The Greeks, particularly Hippocrates (460 to 375 BC] Roman physicians including Celsus (25 BC to AD 50) (Spencer, W. 1948-1953. Translation of A Celsus De medicina. Loeb Classical Library, Heinemann, London, United Kingdom.) and Galen (Galenus of Pergamon, AD 129 to 200) **(**Kuhn, K**.** (ed.). 1821-1833. Galen (Galenus). Opera omnia, 22 vols. Leipzig, Germany.) were familiar with the human roundworms *Ascaris lumbricoides* and *Enterobius vermicularis* and

tapeworms belonging to the genus *Taenia.* Somewhat later, Paulus Aegineta (AD 625 to 690) clearly described *Ascaris, Enterobius,* and tapeworms and gave good clinical descriptions of the 24

Infections they caused **(**Grove, D. I. 1990. A history of human helminthology. CAB International, Wallingford, United Kingdom.). Following the decline of the Roman Empire, the study of medicine switched to Arabic physicians, including Avicenna, who recognized not only *Ascaris, Enterobius,* and tapeworms but also the guinea worm, *Dracunculus medinensis,*which had been recorded in parts of the Arab world, particularly around the Red Sea, for over 1,000 years. The medical literature of the Middle Ages is very limited, but there are many references to parasitic worms. In some cases, they were recognized as the possible causes of disease but in general, the writings of the period reflect the culture, beliefs, and ignorance of the time. The science of helminthology really took off in the 17th and 18th centuries following the reemergence of science and scholarship during the Renaissance period. Linnaeus described and named six helminth worms, *Ascaris lumbricoides, Ascaris vermicularis* (*Enterobius vermicularis*), *Gordius medinensis* (*Dracunculus medinensis*), *Fasciola hepatica, Taenia solium,* and *Taenia lata* (*Diphyllobothrium latum*) **(**Linnaeus, C. 1758. Systema Naturae, sive regina tria naturae systematice proposita por classes, ordines, genera, species cum characteribus differentiis synonymis, locis, 10th ed. L. Salvi, Holmiae, Sweden.). Thereafter, more species were described until at the beginning of the 20th century, 28 species had been recorded in humans, a number that has now grown to about 300 species, including accidental and very rare records **(**Coombs, I., and D. W. T. Crompton. 1991. A guide to human helminthology. Taylor & Francis, London, United Kingdom.). Even if some of these are doubtful, at least 280 species are recognized by Ashford and Crewe in their annotated checklist (Ashford, R. W., and W. Crewe. 1998. The parasites of *Homo sapiens.*Liverpool School of Tropical Medicine, Liverpool, United Kingdom.)

INTESTINAL NEMATODES

The largest number of helminth organisms that parasitize humans is found in the roundworm group. Several roundworms are important in causing disease; some of these have other mammalian hosts, and some are considered to be pathogenic only under certain circumstances, Consquently, there is great variation in life cycle stages and pathologic sequelae found in humans.

Nematodes are unsegmented helminthes with bilateral symmetry, have a fully functional digestive tract, are usually long and cylindrical, and vary from a few millimeters to over a meter long. Their numbers per patient vary considerably; however, worm size and numbers do not necessarily correlate with symptoms or pathologic changes.

All nematodes that are parasitic in humans have separate sexes, with the male usually being smaller than the female. Egg production varies considerably from species to species but tends to be comsistent within a specific group.

The life cycle of nematodes has five successive stages; four larval stages and the adult. In most cases, the third-stage larva is the infective stage. The eggs and larvae of nematodes living in the intestinal tract are passed outside the body in the feces or may be deposited on the perianal skin by the female worm. Eggs of certain species are almost fully embryonated, while other species may require an extended period of egg embryonation in the soil. In some cases, the eggs are infective when swallowed and other eggs will hatch in the soil, thus initiating infection by larval penetration of the human skin rather than egg ingestion.

Usually, the host response to the presence of these worms is directly related to the worm burden. Diagnosis of these infections depends on the recovery and identification of adult worms, eggs, or larvae.

World Health Organization estimates suggest that over 3.5 billion people carry nematode infections.With these numbers in mind, it is not uncommon for almost any laboratory within the United states to occasionally recover helminth eggs, larvae, or adults from human specimens. Unfortunately, lowering the intensity of infection in a host population through the use of chemotherapy may produce minimal declines in transmission relative to its endemic level.

Enterobiasis

Synoyms

Threadworm infection, pinworm infection, seatworm infection, oxyuriasis

Causative Agent

Enterobius vermicularis

Enterobius vermicularis has been known since ancient times and has been studied extensively through the years; its original name was Oxyuris vermicularis . E.vermicularis is thought to cause the world's most common human parasitic infection .Prevalence in

children can be high, a fact that has been recorded despite the difficulties in confirming the infection.

Although there has been some discussion of Enterobius gregorii being a distinct species of pinworm, it appears that this organism may actually be a young stage of E.vermicularis. A series of 849 male pinworms from a single individual were examined. Based on spicule morphology, the worms were classified into differwnt groups, However, various transitional forms were observed in the spicule morphology in the worms with intermediate body size between E.vermicularis and E.gregorii, showing that the basal portion of the spicule of E.vermicularis develops after completion of the E.gregorii-type basal portion.

History

Eggs of threadworm have been found in a 10,000 year old coprolith in USA making it the oldest demonstrated infection of humans. It is considered to be World's most common parasitic infection. There is a common saying about this disease. "You had this infection as a child, you have it now or you will get it again when you have children." It has been estimated that about 200 million people in the world are infected. Leuckart in 1865 described the complete life cycle of the worm.

Geographical Distribution

It is cosmopolitan, found all over the world.

Location in the Host

The adults are found in the lumen of the caecum and appendix. Sometimes they may also be present in the ascending colon and ileum. The anterior end of the worm attaches to the mucosa.

Morphology

Thread worm is a nematode with a finely striated cuticle. It can be seen with the naked eye as tiny bits of thread white in colour.The oral end lacks a true buccal capsule but has three lips with a dorso-ventral bladder-like expansion of the cuticle.

Male worm

The male measures 2-4mm in length and 0.1-0.2mm across its girth.The posterior end of the body is curved and sharply truncated. It possesses a sharply curved conspicuous terminal copulatory spicule. The gubernaculums is absent.It has a single tubular testis, two terminal vesicles and ejaculatory duct leading to the cloaca. Male worm is rarely seen as it dies immediately after fertilizing the female.

Female worm

It is 8-12 mm in length and 0.3-0.5 mm across its thickest part. The posterior extremity is straight and drawn out into a long, tapering and finely pointed tail which is about $1/3^{rd}$ of the length of the worm. It looks like a *pin* and hence, the name *pinworm.* The female reproductive organs are paired and T-Shaped. The vulva opens mid ventrally just in front of the middle part of the body. In a gravid worm uterus is distended with large number of ova (on average about 11,000 in number)

Difference between male and female threadworms

	Male	Female
Size	Very small (2-4 x 0.1-0.2 mm) Smaller than Female worm	Larger than male (8-12 x 0.3-0.5 mm) but smaller than a hookworm
Posterior end	Coiled ventrally	Tapering and straight

Life Span

It is very short. Adult males die immediately after fertilization where as adult females live for 37-100 days.

Eggs

The worm is oviparous.

Characters of the threadworm eggs

- Asymmetrical in shape, planoconvex
- Not bile stained
- Measures 50-60 µm x 30µm
- Surrounded by a transparent shell
- Composed of 2 layers of chitin
- Contains a coiled tadpole like larva
- Floats in saturated salt solution
- Coated on outside by albumin gel which helps in adherence of egg to skin and clothes
- Become infective after exposure to atmospheric oxygen for 6 hrs.
- More resistance to antibiotics.

Life Cycle

The lifecycle begins with eggs being ingested. The eggs hatch in the duodenum (i.e., first part of the small intestine). The emerging pinworm larvae grow rapidly to a size of 140 to 150 micrometers in size, and migrate through the small intestine towards the colon.During this migration they moult twice and become adults.Females survive for 5 to 13 weeks, and males about 7 weeks.The male and female pinworms mate in the ileum (i.e., last part of the small intestine), whereafter the male pinworms usually die and are passed out with stool. The gravid female pinworms settle in the ileum, caecum (i.e., beginning of the large intestine), appendix and ascending colon, where they attach themselves to the mucosa and ingest colonic contents. Almost the entire body of a gravid female becomes filled with eggs. The estimations of the number of eggs in a gravid female pinworm ranges from about 11,000 to 16,000. The egg-laying process begins approximately five weeks after initial ingestion of pinworm eggs by the human host.

The gravid female pinworms migrate through the colon towards the rectum at a rate of 12 to 14 centimeters per hour. They emerge from the anus, and while moving on the skin near the anus, the female pinworms deposit eggs either through (1) contracting and expelling the eggs, (2) dying and then disintegrating, or (3) bodily rupture due to the host scratching the worm. After depositing the eggs, the female becomes opaque and dies. The reason the female emerges from the anus is to obtain the oxygen necessary for the maturation of the eggs.

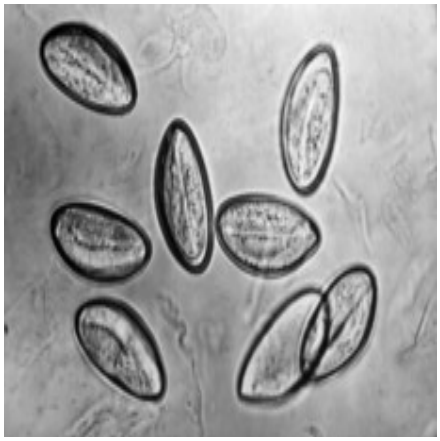


Figure 1. Pin worm eggs

Figue 2 Pin worm egg

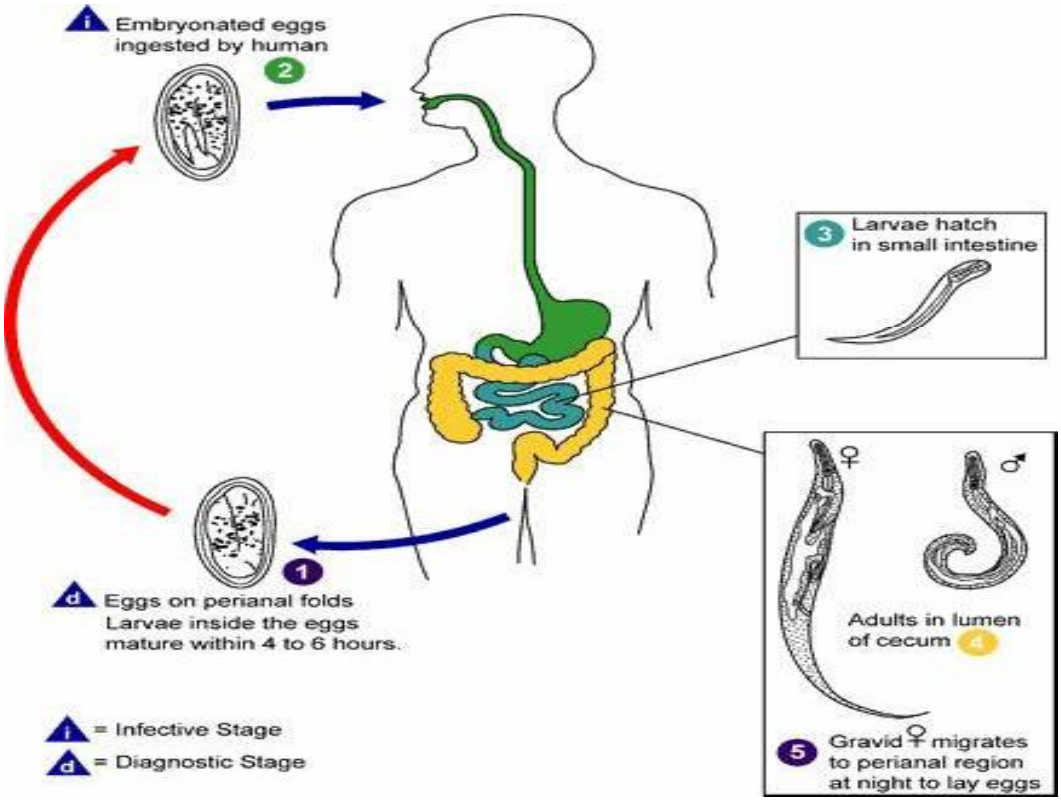


Figure: 3: Life cycle

Pinworm infection spreads through human-to-human transmission, by ingesting (i.e., swallowing) infectious pinworm eggs. The eggs are hard and can remain viable (i.e., infectious) in a moist environment for up to three weeks. They do not tolerate heat well, but can survive in low temperatures: two-thirds of the eggs are still viable after 18 hours at −8 degrees Celsius (18 °F).

After the eggs have been initially deposited near the anus, they are readily transmitted to other surfaces through contamination. The surface of the eggs is sticky when laid, and the eggs are readily transmitted from their initial deposit near the anus to fingernails, hands, night-clothing and bed linen. From here, eggs are further transmitted to food, water, furniture, toys, bathroom fixtures and other objects. Household pets often carry the eggs in their fur, while not actually being infected. Dust containing eggs can become airborne and widely dispersed when dislodged from surfaces, for instance when shaking out bed clothes and linen. Consequently the eggs can enter the mouth and nose through inhalation, and be swallowed later. Although pinworms do not strictly multiply inside the body of their human host, some of the pinworm larvae may hatch on the anal mucosa, and migrate up the bowel and back into the gastrointestinal tract of the original host. This process is called *retroinfection*. According to Burkhart (2005), when this retroinfection occurs, it leads to a heavy parasitic load and ensures that the pinworm infestation continues. This statement is contradictory to a statement by Caldwelli (1982), who contends that retroinfection is rare and not clinically significant. Despite the limited, 13 week lifespan of individual pinworms, autoinfection(i.e., infection from the original host to itself), either through the anus-to-mouth route or through retroinfection, causes the pinworms to inhabit the same host indefinitely.

Mode of infection

It is primarily a disease of children and intra-familial transmission is very common. The different modes of transmission are:

a. *Direct transfer* of eggs from anus to the mouth by way of contaminated fingers.
b. *Retroinfection* is seen primarily in adults when eggs catch in the perianal area and the larvae migrate back in the bowels to mature
c. Through contaminated night clothes, bed linen etc. where eggs can remain viable and infective for 2-3 weeks.

d. *Airborne transmission* is likely and spread in a family or group of children may occur in this way.

Source of Infection

Infected human beings are the only source.

Clinical Manifestations

The clinical symptoms could be due to intestinal or ectopic enterobiasis. Majority of the infections are essentially asymptomatic.

Pruritus ani is the main clinical presentation.All the clinical features which may be produced in enterobiasis are given

Ectopic enterobiasis occurs when female worms invade organs outside the normal habitat of intestine. This spread occurs most frequently in women because the vagina is well within range of the worm's migratory capabilities.

Symptoms Attributable to Intestinal Enterobiasis

- Pruritis ani
- Nocturnal enuresis
- Perianal excoriations
- Abdominal pain
- Anorexia
- Nail biting
- Appendicitis
- Nervousness
- Insomnia
- Hyperactivity
- Loss of weight

Symptoms Attributable to Ectopic Enterobiasis

- Salpingitis
- Omentitis
- Cervicitis
- Peritonitis
- Periappendicitis.
- Recurrent UTI

Pathology

Threadworms lack buccal apparatus suited to tissue penetration and may gain entrance to extra-intestinal sites by utilizing small abrasions in the gut mucosa. There may be haematogenous spread to different organs such as liver, Spleen and lungs. There is mucosal ulceration and sub-mucosal abscesses in the intestinal enterobiasis.

Extra intestinal lesions show eosinophilc and lymphocytic infiltration, ulceration, necrosis and granuloma formation

Epidemiology

- It is cosmopolitan in distribution. Over 200 million infected.
- More in temperate climates, probably because of less frequent bathing and more frequent use of soiled underclothes
- Rate of infection is highest in children
- Three times more common in adult females than males.
- More in whites than in blacks, may be due to racial immunity
- Infection can be auto infection, retroinfection or airborne
- More in developed countries
- Disease found in all rich and poor, educated or uneducated
- Eggs highly infective, can infect within 6 hrs of being laid
- Eggs highly resistant to antiseptics
- Infection is not transmitted from pet animals such as dogs and cats
- Infection associated frequently with *Dientamoeba fragilis* infection
- Difficult to eradicate from family because of extra-familial source of infection

Laboratory Diagnosis

Threadworm infection is suspected in children with perianal itching, insomnia and restlessness. Diagnosis is made by finding out the adultworms and demonstration of eggs.

Detection of Adult Worms

Worms can be discovered by patients themselves or parents. These can also be recovered after an enema. Patient should be instructed to preserve the worm in alcohol of 10 per cent solution of formaldehyde for examination in the laboratory. Typical features as described above can be seen under the microscope.

Demonstration of Eggs

Stool examination for finding the eggs of threadworm is not recommended because the worm lays eggs on the perianal region and despite best efforts using stool concentration techniques also, not more than 5 per cent of the patients will show ova in the faeces. Ova can be recovered from patients by using any of the following methods

a. *Using a NIH* (National Institute of Health) swab. Perianal scrapings early in the morning before the patient takes bath are taken and examined for threadworm eggs.
b. *Cellulose tape collection* The tape is folded sticky side out over the end of a slide or tongue blade.pressed firmly against the perianal area and then spread on a glass slide and examined under the low power of a microscope. The swab should be taken by the patient.

On 3 to 5 consecutive mornings, before bathing and brought to the laboratory for examination.

About 50 percent of the infections are usually detected by single examination. 90 per cent by three examinations and 99 per cent by 5 consecutive examinations.

The ova can also be discovered from nail washing, bed linen and inanimate objects in the patient's room. Occasionally eggs are found in the urine deposit, duodenal aspirate and Papanicolou smear taken from vagina.

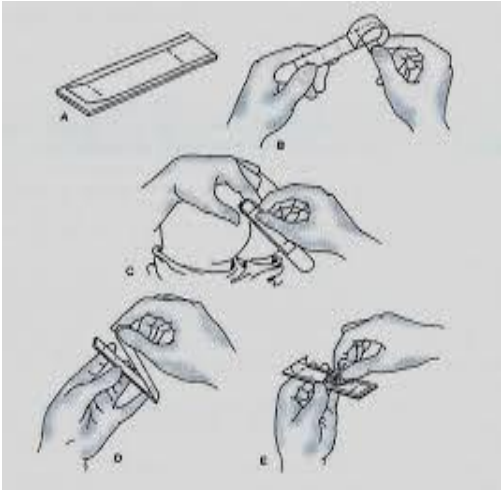


Figure: 4 Scotch Tape Test

Prevention and control

a**.** Children should keep their finger nails short

b. Frequent hand washing before meals and after defecation

c. Good personal Hygiene

d. Treatment of infected case and all other members in the family or institution

e. Fingers should not be put in mouth, as a habit

f. Ordinary washing of bedding will usually kill threadworm eggs.

Total prevention is neither realistic nor possible. It is also recommended that children sleep in closed garments. Sun and UV lamp radiation will destroy the eggs in the environment. However the level of chlorination done in swimming pools may not kill the eggs.

Drug review

3.c.DRUG REVIEW

ELISEVI KUDINEER

INGREDIENTS:

Elisevi elai *(Merremia emarginata)*

Murungaipattai (*Moringa oleifera)*

Kadukaaithol *(Terminalia chebula)*

Thaanrikaaithol (*Terminalia bellirica*)

Nellivatral (*Phyllanthus emblica*)

Vaaividangam *(Embelia ribes)*

எலிக்காதிலை- Elikkadhilai

Scientific Classification

Kingdom : Plantae

Division : Angiosperms

Order : Solanales

Family : Convolvulaceae

Genus : *Merremia*

Species ; *emarginata*

Synonyms: Merremia gangetica (Linn.) Cuf. *Ipomoen reniformis Choisy*

Vernacular Name:

San: Akhukarni, Hin:Musakani, Musakari Mal: Eliccevi.

Tam:Eikkattukkirai,Perattaikkirai Tel: Elika jimudu

Parts Used: Whole plant

சுவை: - இனிப்பு **தன்மை:-** தட்பம் **பிரிவு:-** இனிப்பு

செய்கை: மூத்திரவர்த்தனகாரி, சமனகாரி

குணம்

தாகசுர வெப்பந் தலையெடுத்த நீர்ச்சுருக்கு

மேகமுறும் நீரிழிவு மிஞ்சாதே- போகமதில்

மெள்ளச் சுகமளிக்கும் மெல்லியலா யிந்நாட்டில்

உள்ளவெலிக் காதிலைக்கா மோது

இது மலபந்தஞ் செய்யும்; நாவறட்சி, முக்குற்றம், கழலை, வயிற்றில் உண்டாகும் நோய்கள், பாண்டு, சூலை, சுரம், பகந்தரம், தமரக நோய், புழு, வெள்ளை இவைகளைப் போக்கும்.

Uses:

The plant is bitter, acrid, refrigerant, deobstruant, diuretic, alterant, anthelmintic, carminative and digestive. It is useful in nephropathy, uropathy, cardiac diseases, fever, anaemia, leucoderma, stangury, otalgia, cephalalgia and rat bite.

Chemical components

Amino acid,
Tannins (condensed and pseudotanins),
Flavonoids,
Terpenoids,
Cardiac glycosides

Pharmacological studies

Anthelmintic:

Study evaluated ethanol and aqueous extracts of whole plant of Merremia emarginata for anthelmintic activity against Ecinia foetida and Pheretima posthuma. Results showed dose dependent increase in anthelmintic activity. The ethanolic extract showed a significant anthelmintic activity at highest concentration of 250 mg/ml.

கடுக்காய் – Kadukkai

Scientific Classification

Kingdom : Plantae
Division : Angiosperm
Order : Myrtales
Family : Combretacea
Genus : *Terminalia*
Species : *chebula*

Vernacular Name: Eng: Chebulic myrobalan; Hin: Hara, Harara, Harad; Kan:Harra, Karakkayi, Alalekayi; Mal:Katukka; San: Haritaki, Pathya, Abhaya; Tam:Katukkay Tel: Karakkaya, Karitaki

வேறு பெயர்:-

அக்கோடம், அங்கணம், அந்தன், அபரணம், அபையன், அமரிதம், அமலை, அமுதம், அம்மை, அம்ருதா, அரபி,அரிதகி, அலியன் அவ்வியதா, இரேசகி,ஏமவதி ஐயவி, ஹைமவதி,கடு, காயஸ்த்தா, சியிருதம், சிரயஹி, சிரோட்டம், சிவா, சேதகி, சேதநிகா, சேயா, திவ்யா, தேவி, நந்திரி, நெச்சி, பத்தியம், பாரியம், பிஷக்வாரா, பூதனா, பூதன், ப்ரபத்யா, ப்ராணதா, மேகம், வயதரம், வயஸ்த்தா, வரிக்காய், வனதுர்க்கி, விஜயவேதன், ரோகிணி, ஜீவநிகா, ஜீவந்தி, ஜீவப்பிரியா,ஜீவ்யா,ஜெயா

பயன்படும் உறுப்பு: பிஞ்சு, பழம்

சுவை:- முக்கிய சுவை- துவர்ப்பு, அத்துடன் சிறிது- இனிப்பு- புளிப்பு- கார்ப்பு, கைப்பு பெற்றிருக்கும்

பொதுப் பண்பு

“ தாடை கழுத்தக்கி தாலு குறியிவிடப்

பீடை சிலிபதமுற் பேதிமுடம்- ஆடையெட்டாத்

தூலமிடி புண்வாத சோணிகா மாலையிரண்

டாலமிடி போம்வரிக்கா யால்”

கடுகாயினால் கன்னம், கழுத்து, நா, ஆண்குறி, இவ்விடங்களின் நோய்கள், கால்டிப்புற்றுநோய், அதிதூலம், இடிப்புண், வாத சோணிதமவாதம், காமாலை, தாவர, சங்கம விடங்கள் போகும்.

Chemical Constituents:

Chebulin from flowers. Palmitic, stearic, oleic, linoleic, arachidic and behenic acids from fruit kernels. Fruits contain about 30% of an astringent substance; astringency is due to the charectersitic principle chebulnic acid. Also contain tannic acid 20-40%, gallic acid, resin etc. and a purgative glycoside of anthraquinone derivative. Chebulin exhibited antispanmodic action on smooth muscle similar to papaverine.

Pharmacological studies

1.Anti anthelmintic

Uses:

The fruits are astringent, sweet, acrid, bitter, sour, thermogenic, anodyne, anthelmintic, anti-inflammatory, vulnerary, alterant, stomachic, laxative, purgative, carminative, digestive, cardiotonic, aphrodisiac, antiseptic, diuretic, febrifuge, depurative and tonic. They are useful in vitiated conditions of tridosa, wounds ulcers, inflammations, gastropathy, anorexia, helminthiasis, flatulence, haemorrhoids, jaundice, hepatopathy, splenopathy, pharyngodynia, hiccough, cough, urophathy, versical and renal calculi, cephalalgia, epilepsy, ophthalmopathy, skin diseases, leprosy, intermittent fever, cardiac disorders, stomatitis, neuropathy and general debility.

நெல்லிக்காய்- Nelli Vatral

Scientific Classification

Kingdom : Plantae

Division : Angiospem

Order : Malpighiales

Family : Euphorbiaceae

Genus : *Phyllanthus*

Species : *embelica*

Synonyms: Emblica officinalis Gaertn.

Vernacular Name:

San: Amalaki, Dhatri Eng: Emblic myrobalan, Indian gooseberry Hin:Amlika amalak, amvala; Kan:Nellka Mal:Nellimaram, Nellikka Tam: Nelli; Tel:Usirikaya, Amalakamu

Parts Used: Root bark, bark, leaves, fruits

வேறு பெயர்:-

ஆமலகம், ஆலகம், ஆம்பல், ஆமரிகம், தாத்தாரி, தாத்திரி, கோரங்கம், மிறுதுபலா, மீதுந்து

பயன்படும் உறுப்பு:- இலை, பூ, பட்டை, வேர், காய், விதை

சுவை:- புளிப்பு, துவர்ப்பு, இனிப்பு **தன்மை:-** தட்பம் **பிரிவு:-** இனிப்பு

செய்கை:-

குளிர்ச்சியுண்டாக்கி

சிறுநீர்ப்பெருக்கி

மலமிளக்கி

பொது குணம்:-

"ஆகவன லஞ்சசிஅ சிர்க்கென்பு ருக்கிகண்ணோய்
தாக முதிரவித்தந்த் தாது நஷ்டம்-மேகனத்தின்
இல்லிமுள்ளி போலருகல் எண்கா மியவியங்கம்
நெல்லிமுள்ளி யாற்போ நினை
நல்லநெல்லி முள்ளியது நாக்குக் குருசிதரும்
அல்லல்விரி பித்தம் அகற்றுமதை- மெல்லத்
தலை முழுகக் கண்குளிருந் தாவுபித்த வாந்தி
இலையிழிமே கங்களும் போம் எண்"

நாவுக்குச் சுவையை தருகின்ற நெல்லிமுள்ளியால், உட்சூடு, எலும்புருக்கி நோய், பெரும்பாடு, வெறிநோய், நீரருகல், வாந்தி, வெள்ளை, ஆண்குறிக் கொப்புளம், ஆகிய இவைகள் விலகும். இதை அரைத்து தலை முழுகக் கண் குளிரும்.

Chemical Constituents:

The major amino acids present are; alanine, aspartic acid, glutamic acid, lysine, and proline, analysis of fresh fruit pulp gave moisture, protein, fat carbohydrates fibre, minerals, iron, niacin, and vitamin fruit ash contains; chromium and copper.

Uses:

The root bark is astringent and is useful in ulcerative stomatitis and gastrohelcosis. The bark is useful in gonorrhea, jaundice, diarrhea and myalgia. The leaves are useful in conjunctivitis, inflammation, dyspepsia, diarrhea and dysentery. The fruits are sour, astringent, bitter, acrid, sweet, coling, anodyne, ophthalmic, carminative, digestive, stomachic, laxative, alterant, alexeteric, aphrodisiac, diuretic, antipyretic, tonic and trichogenous. They are useful in vitiated conditions of tridosa; diabetes, cough , asthma, bronchitis, cephalalgia, phthalmopathy, dyspepsia, colic, flatulence, hyperacidity, peptic ulcer, erysipelas, skin diseases, leprosy, haematemesis, inflammations, anaemia, emaciation, hepatopathy, jaundice, strangury, diarrhea, dysentery, haemorrhages,leucorrhoea, menorrhagia, cardiac disorders, intermittent fevers and greyness of hair.

தான்றி - Thantri

Scientific Classification

Kingdom : Plantae

Division : Angiosperm

Order : Myrtales

Family :Combretaceae

Genus : *Terminalia*

Species : *bellirica*

Vernacular Name:

Eng: Belliric myrobalan; Hin:Bahenda, Bahaira; Kan:Behara, Tanrikayi, Santikayi; Mal:Tani,Tannikka; San: Vibhirakah,Aksah; Tam: Tanni, Banrikkai; Tel: Tandra, Tani

வேறு பெயர்:-

அக்ஷம், அக்கந்தம், அக்காத்தான், அமுதம், அம்பலத்தி, ஆராமம், எரிகட்பலம், கந்தகட்பலம், கந்துகன், கூலித்துருமம், களந்தூன்றி, சகதம், தாபமாரி, வாந்தியம், வித்தியம், விபீதகம், திறிலிங்கம், பூதவாசகம், தானிக்காய், தாணிக்காய்

பயன்படும் உறுப்பு:- இலை, பழம், விதை

சுவை:- துவர்ப்பு **தன்மை-** வெப்பம் **பிரிவு-** இனிப்பு

செய்கை:-

துவர்ப்பி

கோழையகற்றி

மலமிளக்கி

உரமாக்கி

பொது குணம்:-

" சிலந்திவிடம் காமியப்புண் சீழான மேகங்
கலந்துவரும் வாதபித்தங் காலோ-டலர்ந்துடலில்
ஊன்றிக்காய் வெப்ப முதிரபித் துங்கரக்குந்
தான்றிக்காய் கையிலெடுத் தால

“ஆணிப்பொன் மேனிக் கழகும் ஒளியுமிகும்

கோணிக்கொள் வாதபித்தக்கொள்கைபோம்- தானிக்காய்

கொண்டவர்க்கு மேகமறும் கூறா அனற்றணியும்

கண்டவர்க்கு வாதம்போம் காண்”

தான்றிக்காயால் சிலந்திநஞ்சு, ஆண்குறிப்புண், வெள்ளை, குருதியழல்நோய், வளி தீ குற்றங்களால் வரும் நோய்கள் போம். இது, உடற்கு அழகையும் ஒளியையும் கொடுத்து முக்குற்றங்களையும் தன்னிலைப்படுத்தும்.

Chemical Constituents:

Fruits contain about 17% tannin and β-sitosterol, gallic acid, ellagic acid, ethyl galate, galloyl glucose and chebulagic acid. Heartwood and bark contain ellagic acid and the seed-coat of the fruit contains gallic acid. Kernel oil had a purgative action, and fruit extract produced fall in blood pressure and significant increase of bile secretion in experimental animals.

Uses:

. The fruits are anthelmintic, astringent, acrid, sweet, thermogenic, anti-inflammatory, anodyne, styptic, narcotic, digestive, aperients, experctorant, ophthalmic, antipyretic, antiemetic and rejuvenating. They are useful in vitiated conditions of *kapha* and *vata*, cough, bronchitis, pharyngitis, insomnia, dropsy, dyspepsia, flatulence, vomiting, haemorrhages, opthalmopathy, strangury, splenomegaly, cephalalgia, skin diseases, leprosy, fevers, ulcers and general debility. The mature and dry fruit is constipating and is useful in diarrhea and dysentery. The oil obtained from the seeds is trichogenous and is useful in dyspepsia, skin diseases, leucoderma and gryness of hair. The bark is mildly diuretic and useful in anaemia and leucodes

Pharmacological studies

Analgesic activity

The antisecretory and analgesic activities of the crude extract of *Terminalia bellerica*. *T. bellerica* extract at the dose range of 300 - 1000 mg/kg inhibited the castor oil-induced intestinal fluid secretion in mice.The extract also dose-dependently (50 - 100 mg/kg) where it reduced the numbers of acetic acid mediated in mice. These results indicate that *TB* exhibit antisecretory and anti-nociceptive effects,hence justifying its medicinal use in diarrhea and pain.

முருங்கை - Murungai

Scientific Classification

Kingdom : Plantae

Division : Angiosperm

Order : Brassicales

Family : Moringaceae

Genus : *Moringa*

Species : *oleifera*

Synonyms: Moringa pterygosperma Gaertn.

Vernacular Name:

San: Sigruh, sobhanjanah Eng: Horse-radish tree, Drumstick tree Hin:Sahijan, Mungana Kan: Nuggi, Murunga Mal:Murinna Tam:Murunkai Tel: Munaga, Mulaga

வேறு பெயர்:-

சிக்குரு கிரஞ்சம், கிழவி சோபாஞ்சனம்

பயன்படும் உறுப்பு:- எல்லாப் பாகங்களும்

சுவை:- கைப்பு, துவர்ப்பு, இனிப்பு **தன்மை**- தட்பம்

பிரிவு-(காய்) இனிப்பு (பட்டை, வேர்) கார்ப்பு

செய்கை:-

இசிவகற்றி

வெப்பமுண்டாக்கி

கோழையகற்றி

சிறுநீர்ப்பெருக்கி

பொது குணம்:-

முருங்கைவேர்ப் பட்டைக்கு மூடு கபத்தோ

டொருஞ்குறாச் சன்னிகரம் ஓடும்- அருங்கனக,

வட்டைப் பொருமுலையாய்! வாய்வொடுவி டங்களுமேற்

பட்டைக்குப் போமே பறந்து.

இதன் வேர் பட்டையினால் ஐயமும் முப்பிணியும், மரப்பட்டையினால் வளிக்குற்றமும் சில நஞ்சுக்களும் நீங்கும்.

Chemical Consistuents:

Carotene, nicotinic acid and ascorbic acid oxidase sulphur, and a prolamin. The essential amino acids present in the total proteins are arginin, histidine, lysine, tryptophan, phenylalanine, methionine, thereonine, leucine, isoleucine, and valine, No-protein nitrogen histidine, arginine, threonine, valine, methionine, phenylalanine, isoleucine, leucine, and tyrosine, lysine, and tryptophan traces and cystine nil. The essential amino acids present in the leaf proteins are arginine histidine lysine tryptophan, phenylalanine, methionine, threonine, leucine, isoleucine, and valine. zeatin, quercetin, beta-sitosterol, and kaempferol.

Pharmacological Studies:

Antihelmintic

Uses:

The roots are bitter, acrid thermogenic, anthelmintic, digestive, carminative, constipating, anodyne, anti-inflammatory, emmenagogue, sudorific diuretic, ophthalmic, rubefacient, expectorant, haematinic, antilithic, alexipharmic stimulant and vesicant. They are useful in vitiated conditions of Vata and Kapha, dyspepsia, anorexia, verminosis, diarrhea, colic flatulence, otalgia, paralysis,inflammations, Fever, vesical and renal calculi, ascites, ophthalmopathy, cough, asthma bronchitis, pectoral diseases, splenomegaly, epilepsy, hysteria, cardiopathy, abscess and pharyngodynia. The bark is acrid, bitter, thermogenic, abortifacient, antifungal and cardiac and circulatory stimulant. It is useful in ascites, vitiated conditions of vata and kapha and ringworm. The leaves are anti-inflammatory, anodyne, anthelmintic, ophthalmic and rich in vitamins A and C. They are useful in scurvy, vitiated conditions of kapha and vata, wounds tumours, inflammations and helminthasis. The seeds are acrid, bitter, anodyne, anti-inflammatory, purgative, antipyretic and ophthalmic. They are useful in neuralgia, inflammations, intermittent fevers and ophthalmopathy.

வாய்விளங்கம் -Vaivilangam

Scientific Classification

Kingdom : plantae

Division : Angiosperms

Order : Ericales

Family : Myrsinaceae

Genus : *Embelia*

Species : *ribes*

Vernacular Name:

San: Vidangah, vellah; Eng:Embelia,Hin:Vayvidamg, Bhabhiramg, Kan:Vayuvidanga Mal: Vital; Tam:Vayu-vilamga Tel: Vayuvidangamu, Vidanga

வேறு பெயர்:-

வாயுவிளங்கம், கேரளம், வாய்விலங்கம், வர்னனை, வாய்விடங்கம்

பயன்படும் உறுப்பு:- (பழம்) விதை

சுவை:- கைப்பு **தன்மை**- வெப்பம் **பிரிவு-** கார்ப்பு

செய்கை:-

புழுக்கொல்லி

அகட்டுவாய்வகற்றி

பசித்தீத்தூண்டி

வெப்பமுண்டாக்கி

பொது குணம்:-

பாண்டுகுட்டம் குன்மம் பருந்தூல நோய்வாதந்

தீண்டு திரிவிடஞ் சிரந்துண்டம்- பூண்டமடி

நோய்விளங்கக் காட்டாத நுண்கிருமி யாசனப்புண்

வாய்விளங்கங்காட்டவிருமார்.

இதனால் பாண்டு, குன்மம், மிகுபரும நோய், வாயு, பாம்பு முதலாகிய நஞ்சுகள், தலை, மூக்கு, வயிறு இவைகளில் இப்பிணிகளை காட்டாமற்படி தடுக்கும். நுண்புழுக்களும் எருவாய் புண்ணும் போம்.

Chemical Constituents:

A flatoxin B1,
Embelin 2,5-isobutylamine salts,
Christembine,
Homoembelin,
Vilangine,
Quercitol

Uses:

The fruits are acrid, astringent, bitter,thermogenic, anthelmintic, depurative, brain tonic, digestive, carminative, stomachic, diuretic, contraceptive, rejuvenating, alterant, stimulant, alexeteric, laxative, anodyne, febrifuge and tonic, and are useful in vitiated conditions of kapha and vata, helminthiasis, skin diseases, leprosy, pruritus, nervous debility, amentia, dyspepsia, flatulence, colic, constipation, strangury, tumours, asthma, bronchitis, dental caries, odontalgia, hemicranias, dyspnoea, cardiopathy, psychopathy, ringworm infestation fever, emaciation and general debility. The roots are acrid, astringent, thermogenic and stomachic, and are useful in vitiated conditions of Vata, odontalgia, colic, flatulence and dyspepsia. The leaves are astringent, thermogenic, demulcent and depurative, and are useful in pruritus, skin diseases and leprosy.

Pharmacological Studies

Antianthelmintic activity

The ethanolic extract of the seeds of *Embelia ribes* (10-200 mg/mL) exhibited potent anthelmintic activity. This result may lend support for the traditional use of the plant as an anthelmintic.

INGREDIENTS OF ELISEVIKUDINEER

Figure 5: Elisevielai

Figure 6 :Kadukai

Figure 7: Nelli vatral

Figure 8: Thandrikai

Figure 8: Murungaipattai

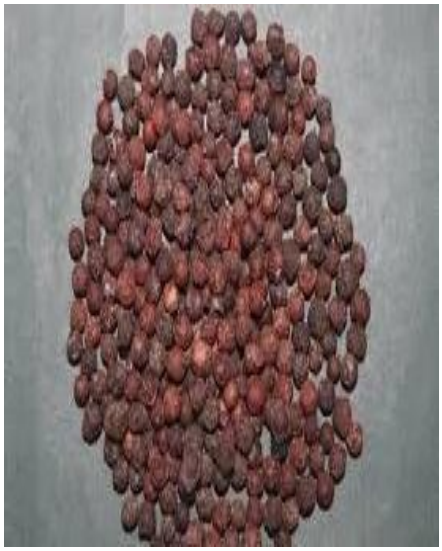


Figure 9: Vaaividangam

PREPARED MEDICINE

Figure:10: Elisevikudineer chooranam

Figure:11: Elisevi kudineer

Materials And Methods

4.MATERIAL AND METHODS

Keerinoi is one of the common illnesses in children. In our NIS OPD, a number of cases are approaching Kuzhandhai maruthuvam department daily with the Symptomps of *Keerinoi*. Hence it was proposed to study about the disease. A Protocol was prepared and submitted before IEC of National Institute of Siddha and approval for the study was obtained vide approval No:**NIS/IEC/8-14/23-26-08-2014**.The trial was registred in Clinical trial Registry of India with Reg .No.**CTRI/2016/05/006934**. After obtaining approval from the committee, the clinical study on *Keerinoi* (Thread worm)in children with the drug *Elisevi kudineer was* carried out as per the protocol.

4.1AUTHENTICATION OF INGREDIENTS IN FORMULATIONS

To confirm the identity of herbal species used in the formulations by a Taxonomist using organoleptic characters and authenticate them.

NAME OF THE TRIAL DRUG: *ELISEVI KUDINEER.*

INGREDIENTS:

Elisevi elai	*(Merremia emarginata)*	- 2gm
Murungaipattai	(*Moringa oleifera)*	- 2gm
Kadukaaithol	*(Terminalia chebula)*	- 2gm
Thaanrikaaithol	(*Terminalia bellirica*)	- 2gm
Nellivatral	(*Phyllanthus emblica*)	- 2gm
Vaaividangam	*(Embelia ribes)*	

SOURCE OF TRIAL MEDICINE :

The required drugs for preparation of ***ELISEVI KUDINEER*** was purchased from a raw drug shop and raw drugs were authenticated by Botanist National Intitute of Siddha. The medicine was prepared in Gunapadam lab of National Institute of Siddha after proper purification.The prepared medicine was been authenticated by the concerned Head of the Dept for its completeness.

PURIFICATION PROCESS OF RAW MATERIALS

Purification method has been adopted from literary reference.

PURIFICATION METHOD

Elisevi elai - The leaves were cleaned with white cloth.

Murungai pattai - The skin of the bark was removed.

Kadukaai - Soaked in rice water and the seeds were removed.

Nellivatral - Boiled with milk and the seeds were removed.

Thaandri - Soaked in thazhai vizhuthu juice for 3 hours and remove the seed.

Vaaividangam - Dried in sunlight

4.2 STANDARD OPERATING PROCEDURE OF ELISEVI KUDINEER :

Above mentioned drugs are purified by purification method. All the purified drugs are powdered in decoction powder form except vaaividangam and keep in a clean glass container. Vaaividangam is powdered in chooranam form and keep in glass container.

METHOD OF PREPARING KUDINEER:

The above decoction powder was mixed with 160 ml of water and boiled until one eighth of decoction (20 ml)and add vaaividangam powder was added at the time of consumption.

Dosage : 8 -10 years (10 ml with 1gm vaaividangam)

10-12 years (20 ml with 2gm vaaividangam)

** Dose calculation for pediatric group is based on Age, formula mentioned in the Gunapadam Thathu vaguppu text.

Duration : 3 days.

DRUG STORAGE:

The trial drug *ELISEVI KUDINEER* powder is stored in clean and dry container.

DISPENSING

The *ELISEVI KUDINEER* chooranam is given in separate pockets of airlock cover and vaaividangam chooranam was given separately as 1 gm pockets covered with butter paper.

4.3 PRECLINICAL STUDIES

A. Physicochemical Analysis

B. Pharmacological Activity

C. Chemical Analysis

4.3.A.PHYSICOCHEMICAL ANALYSIS OF ELISEVI KUDINEER

The Physicochemical analysis of the drug Elisevi kudineer was done at Siddha Central Research Institute, Arumbakkam Chennai. Since the form of the drug is in kudineer chooranam the parameters such as Ash, Loss on drying, Acid insoluble Ash, Water Soluble Extraction, Alcohol Soluble Extraction, pH was done using Quality control methods for medicinal plants materials.

1.Loss on drying

Loss on dying is the loss of mass expressed as percent w/w. About 10g of drug sample was accurately weighed in a dried and tared flat weighing bottle and dried at 105^0C for 5hrs. Percentage was calculated with reference to initial weight.

2.Total Ash

Take about 2 or 3 g, accurately weighed, of the ground drug in a tarred platinum or silica dish previously ignited and weighed. Scatter the ground drug in a fine even layer on the bottom of the dish. Incarnated by gradually increasing the heat-not exceeding dull red heat- until free from carbon, cool and weigh.

If a carbon free ash cannot be obtained in this way, exhaust the charred mass with hot water, collect the residue on an ash less filter paper, increate the residue and filter paper, add the filtrate, evaporate to dryness and ignite at low temperature. Calculate the percentage of ash with reference to the air dried drug.

3.Acid insoluble Ash

Boil the total ash with for five minutes with 25 ml of dilute hydrochloric acid, collect the insoluble matter in a Gooch crucible or on an ash less filter paper, wash with hot water, ignite, and weigh. Calculate the percentage of acid- insoluble ash with reference to the air dried drug.

4.Water Soluble Extractive

1gm of air dried drug, coarsely powered was macerated with 100ml of distilled water in a closed flask for twenty four hours shaking frequently. Solution was filtered and 25 ml of filtrated was evaporated in a tarred flat bottom shallow dish, further dried at 105^0 C and weighted .The percentage of water soluble extractive was calculated with reference to the air dried drugs

5.Alcohol Soluble Extractive

1 gm of air dried drugs, coarsely powdered was macerated with 100 ml. alcohol in closed flask for 24 hrs. With frequent shaking. It was filtered rapidly taking precaution against loss of alcohol. 25ml of filtrate was then evaporated in a tarred flat bottom shallow dish, dried at 105^0C and weighted. The percentage of alcohol soluble extractive was calculated with reference to air dried drug.

6.pH

The pH of the formulations in 1% w/v and 10% w/v of water soluble portions was determined using simple glass electrode pH meter.

4.3.B.PHARMACOLOGICAL ACTIVITY OF *ELISEVI KUDINEER*

Preparation of the plant extract:

One gram of product of *Elisevi kudineer* sample material was extracted with 20 mL aqueous for 1 min using an Ultra Turax mixer (13,000 rpm) and soaked overnight at room temperature. The sample was then filtered through Whatman No. 1 paper in a Buchner funnel. The filtered solution was evaporated under vacuum in a rota-vator at 40 °C to a constant weight and then dissolved in respective solvents. The dissolving rate of the crude extracts was approximately 100 %. The solution was stored at 18 °C until use.

Worm collection

Adult live nematodes, *Enterobius vermicularis* were collected from Perambur slaughter house, Chennai. They were opened in a plastic bucket separately and the contents were washed up in tap water. The process was repeated for several times until the sediment becoming transparent. Then the adult worms were collected with the help of a

needle and placed in a petridish containing PBS (Phosphate Buffer Saline). Petridish containing the worms was kept in incubator at 38°C until required for experiment on the same day.

In-vitro screening with aqueous extract of *Elisevi kudineer* sample was performed using *Enterobius vermicularis.* The aqueous sample extract were used at various concentrations such as 25 mg/ml (2.5%), 50 mg/ml (5%) and100 mg/ml (10%), distilled water (control) and reference standard Albendazole (2.5%, 5% and 10%) using adult nematode worms in petridish. Observations were made for time taken to paralysis and death of individual worms. Paralysis was said to occur when the worms did not revive even in normal saline. Death was concluded when the worms lost their motility followed with fading away of their body colour.

4.3.C.CHEMICAL ANALYSIS OF *ELISEVI KUDINEER*

Chemical Analysis of *Elisevi kudineer* was done at the Biochemistry lab at National Institute of Siddha, Chennai by the method of Kolkate.

Preparation of Extract:

5ml of sample was taken in a 250ml clean beaker and added with 50ml of distilled water. Then it is boiled well for about 10 minutes. Then it is cooled and filtered in a 100ml volumetric flask and made up to 100ml with distilled water. This preparation is used for the qualitative analysis of acidic/basic radicals and biochemical constituents in it.

Procedure:

Test for Silicate

A 2ml of the sample was shaken well with distilled water.

Action of Heat:

A 2ml of the sample was taken in a dry test tube and heated gently at first and then strong.

Action of Heat:

A 2ml of the sample was taken in a dry test tube and heated gently at first and then strong.

Ash Test:

A filter paper was soaked into a mixture of extract and dil. cobalt nitrate solution and introduced into the Bunsen flame and ignited

Test for Acid Radicals

Test for Sulphate:

2ml of the above prepared extract was taken in a test tube to this added 2ml of 4% dil ammonium oxalate solution

Test for chloride:

2ml of the above prepared extracts was added with 2ml of dil.HCl is added until the effervescence ceases off.

Test for Phosphate:

2ml of the extract were treated with 2ml of dil.ammonium molybdate solution and 2ml of con.HNo3.

Test for carbonate:

2ml of the extract was treated with 2ml of dil. magnesium sulphate solution.

Test for Nitrate:

1gm of the extract was heated with copper turning and concentrated H_2So_4 and viewed the test tube vertically down.

II.Test for Basic radicals

Test for lead:

2ml of the extract was added with 2ml of dil.potassium iodine solution.

Test for copper:

One pinch (25mg) of extract was made into paste with con. HClin a watch glass and introduced into the non-luminuous part of the flame.

Test for Aluminium:

To the 2ml of extract dil.sodium hydroxide was added in 5 drops to excess.

Test for Iron:

a. To the 2ml of extract add 2ml of dil.ammonium solution

b. To the 2ml of extract 2ml of thiocyanate solution and 2ml of con HNo3 is added.

Test for Zinc:

To 2ml of the extract dil.sodium hydroxide solution was added in 5 drops to excess and dil.ammonium chloride is added.

Test for Calcium:

To 2ml of the extract was added with 2ml of 4% dil.ammonium oxalate solution

Test for Magnesium:

To 2ml of extract dil.sodium hydroxide solution was added in drops to excess.

Test for Ammonium:

To 2ml of extract 1 ml of Nessler's reagent and excess of dil.sodium hydroxide solution are added.

Test for Potassium:

A pinch (25mg) of extract was treated of with 2ml of dil.sodium nitrite solution and then treated with 2ml of dil.cobalt nitrate in 30% dil.glacial acetic acid.

Test for Sodium:

2 pinches (50mg) of the extract is made into paste by using HCl and introduced into the blue flame of Bunsen burner.

Test for Mercury:

2ml of the extract was treated with 2ml of dil.sodium hydroxide solution.

Test for Arsenic:

2ml of the extract was treated with 2ml of dil.sodium hydroxide solution

III. Miscellaneous

Test for Starch:

2ml of extract was treated with weak dil.Iodine solution**.**

Test For Reducing Sugar:

5ml of Benedict's qualitative solution was taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The colour changes are noted.

Test for the Alkaloids:

a) 2ml of the extract was treated with 2ml of dil.potassium Iodide solution.

b) 2ml of the extract was treated with 2ml of dil.picric acid.

c) 2ml of the extract was treated with 2ml of dil.phosphotungstic acid.

Test for Tannic Acid:

2ml of extract was treated with 2ml of dil.ferric chloride solution**.**

Test for Unsaturated Compound:

To the 2ml of extract 2ml of dil.Potassium permanganate solution is added**.**

Test for AminoAcid:

2 drops of the extract was placed on a filter paper and dried well. 20ml of Burette reagent is added**.**

Test for Type of Compound:

2ml of the extract was treated with 2 ml of dil.ferric chloride solution

4.4.CLINICAL STUDIES:

POPULATION AND SAMPLE :

The population consists of paediatric patients attending the OPD of Ayothidoss Pandithar Hospital, National Institute of Siddha, Chennai-47.

The sample consists of patients between 8 – 12 yrs age group fulfilling more than three of the inclusion criteria and having positive investigation of ova and cyst of worms in feces.

Sample size : 40 Patients

Study place: OPD & IPD Of Ayothidoss pandithar hospital, National Institute of Siddha,Tambaram Sanatorium, Chennai – 47.

INCLUSION CRETERIA:

Age: between 8-12 years

Having complaints of Loss of appetite

Presence of peri anal itching

Pain around the umbilicus

Teeth grinding during sleep

Bed wetting

History of passing worms in the stools

Positive investigation of ova and cyst of worms.

EXCLUSION CRITERIA:

Amebiasis

Patient infested with round worm

Patient infested with hook worm

Negative investigation of ova and cyst

WITHDRAWAL CRITERIA

Signs of profuse dehydration.

Poor patient compliance.

Patient turned unwilling to continue in the course of clinical trial.

Occurrence of any adverse reaction

Other intestinal complaints

Study Design

An Open clinical trial

NAME OF THE TRIAL DRUG: ***ELISEVI KUDINEER.***

Dosage : 8 -10 years (10 ml with 1gm vaaividangam)

10-12 years (20 ml with 2gm vaaividangam).

Duration : 3 days.

ASSESMENTS AND INVESTIGATIONS

A. Clinical assessment

B. Routine investigations

C. Specific investigations

D. Siddha method of assessment

A.CLINICAL ASSESSMENT

- Presence of peri anal itching
- Pain around the umblicus
- Loss of appetite
- Teeth grinding during sleep.
- Bed wetting.
- History of passing worms in the stools

B.ROUTINE INVESTIGATION

I. MOTION TEST:

OVA

CYST

OCCULT BLOOD

Laboratory diagnosis [* Based on the WHO recommendations]

Helminthic eggs are often easier to find and identify because of their size and their distinctive morphological features. While direct smears of fresh faeces will often

demonstrate helminth eggs, it is usually more efficient for laboratories to do a simple concentration to avoid overlooking parasites that may be present in very small numbers. Direct faecal smears – saline and iodine wet mount preparations Procedure

1). With a wax pencil or other marker, write the patient's name or identification number and the date at the left hand side.

2). Place a drop of saline in the centre of the left half of the slide and place a drop of iodine solution in the centre of the right half of the slide. *Materials and reagents:* Wooden applicator sticks or matchesMicroscope slides (75x25 mm) CoverslipsPens or markers for indelible marking *Dropping bottles containing:* Isotonic saline solution (0.85%; 8.5g/l)Lugol's iodine (1% solution)

3). With an applicator stick or match, pick up a small portion of faeces (approximately 2 mg which is about the size of a match head) and add it to the drop of saline: add a similar portion to the drop of iodine. Mix the faeces with the drops to form suspensions.

4). Cover each drop with a cover slip by holding the coverslip at an angle, touching the edge of the drop, and gently lowering the coverslip onto the slide so that air bubbles are not produced.

5). Examine the preparation with the 10X objective in a systematic manner (either up and down or laterally) so that the entire coverslip area is observed. When organisms are seen, switch to higher magnification top see the more detailed morphology of the object in question.

C.SPECIFIC INVESTGATIONS

SCOTCH TAPE TEST

I. Materials

A. Patient specimen collection requires the following:

1. Clear, transparent“Scotch” tape, about 2” lengths. (Cloudy “magic” tape must NOT be used).

2. Microscope slide(s) with frosted end for labeling.

3. Sterile urine cup or slidecontainer.

II. Specimen Collection

A. Pinworm (Enterobius vermicularis) eggs are deposited around the perianal region; eggs are rarely found in stools, and stool is not appropriate specimen for the diagnosis of pinworm.

B. The “Scotch tape” method gives the best recovery of eggs if used before defecation, bathing or dressing in the morning.

C. Label the slide in pencil with the patient name, medical record number, and date.

D. Firmly press the sticky side of a length of clear, transparent tape to the skin, around the folds of the anus.

E. Apply the tape, sticky side down, to the clear section of the labeled microscope slide. Cut off any excess tape that may overlap the edges of the slide.

F. Place the slide in the specimen cup/container, and deliver to the laboratory along with an appropriate requisition.

D.SIDDHA METHOD OF ASSESSMENT:

Nilam,

Kalam,

Uyirthathukkal,

Udal thathukkal,

Envagai thervugal

.

OUTCOME :

- **Primary** - Results and observation during the study inclusive of clinical improvement etc
- **Secondary** - Clinical Efficacy of the trial drug and its side effects if any

STUDY ENROLLMENT :

- In this open clinical trial, patients reporting at the OPD, between the age group of 6 – 12 , with the clinical symptoms of presence of peri anal itching, loss of appetite, pain around the umbilicus, teeth grinding during sleep (Bruxism) had been examined clinically and scotch tape test had done.
- The patients who are enrolled were be informed about the study, trial drug, possible outcomes and the objectives of the study in the language and terms understandable to patient informant
- After ascertaining the patient informant willingness, informed consent would be obtained in writing from them in the consent form.

- All the patients are given with Registration number of the study. Address, Phone number of the patient has been collected, and Doctors phone number is given to the patient as to report easily should any complications arise.
- Complete clinical history, complaints and duration, examination findings and their profile had been recorded in the prescribed Proforma in the history and clinical assessment forms separately.
- Patients are advised to take the trial drug and appropriate dietary advice has been given according to the patient informant understanding.

CONDUCT OF THE STUDY:

The trial drug "*ELISEVIKUDINEER*" is given continuously for 3 days. On the 7th day patient is requested to attend the OPD for clinical assessment and recorded in the clinical assessment form and prognosis is noted .The patien's informant are requested to bring back the un-consumed trial drug if any. For IP patients the drug are provided daily and prognosis is noted Laboratory investigations are done on 1st day,7 th day & 15th day of the trial and are recorded. After the completion of the treatment, the patient is advised to visit the OPD for further follow-up.

DATA MANAGEMENT:

- After enrolling the patient in the study, the profile of each patient has been maintained and filed. Study No. and Patient No. has been entered on the top of file for easy identification. Whenever study patient visits OPD during the study period, the respective patient file was been taken and necessary recordings have been made at the assessment form or other suitable form.
- The screening forms was been filed separately.
- The Data recordings in all forms was been monitored and scrutinized by HOD, Dept of Kuzhanthai maruthuvam .

ADVERSE EFFECT/SERIOUS EFFECT MANAGEMENT:

There is no development of any adverse reaction.

ETHICAL ISSUES

1. To prevent any infection, proper sterilized lab equipments was been used
2. No other external or internal medicines was given to the patient.
3. The data collected from the patient's informant had been kept confidentially. The patient's informant has been Informed about the diagnosis, treatment and follow-up.
4. After the consent of the patient's informant (through consent form), patient was enrolled in the study.
5. Informed consent will be obtained from the patient's informant explaining in the understandable language to the patient's informant.
6. Treatment is provided free of cost.
7. In conditions of treatment failure , adverse reactions, patients will be given alternative treatment at the National Institute of Siddha with full care.

DATA COLLECTION FORMS:-

FORM I: SCREENING & SELECTION PROFORMA.
FORM II : CONSENT FORM.
FORM III: HISTORY PROFORMA.
FORM IV: CLINICAL ASSESSMENT FORM.
FORM V: LABORATORY INVESTIGATION FORM.
FORM VI: PATIENT INFORMATION SHEET.
FORM VII: WITHDRAWAL FORM.
FORM VIII: ADVERSE EFFECT FORM.
FORM IX: ASSENT FORM

Results And Observations

5.RESULTS AND OBSERVATION

PHYSICO CHEMICAL ANALYSIS OF *ELISEVI KUDINEER*

S.NO	PARAMETER	MEAN
1.	Loss on Drying at 105^0 C	8.69%
2.	Total Ash	4.79%
3.	Acid insoluble Ash	0.53%
4.	Water Soluble Extractive	28.85%
5.	Alcohol Soluble Extractive	20.45%
6.	Ph	3.12

PHARMOCOLOGICAL ACTIVITY OF *ELISEVIKUDINEER*

Test Substance	Conc (mg/ml)	Time taken for paralysis (minutes)	Time taken for death (minutes)
Distilled Water (Control)	-	-	-
Albendazole (Standard)	25	46.02	51.23
	50	37.14	33.46
	100	12.17	26.27

Aqueous extract	25	48.61	53.67
	50	39.38	35.17
	100	15.85	28.10

CHEMICAL ANALYSIS

Results of Acid radicals studies

S.NO	Parameter	Observation	Result
1	Test for Sulphate	-	Negative
2	Test for Chloride	Cloudy appearance present	Positive
3	Test For Phosphate	Cloudy yellow appearance present	Positive
4	Test For Carbonate	-	Negative
5	Test For Nitrate	-	Negative
6	Test for Sulphide	-	Negative
7	Test For Fluoride &oxalate	-	Negative
8	Test For Nitrite	-	Negative
9	Test For Borax	-	Negative

Interpretation

The acidic radicals test shows the presence of **Chloride, Phosphate.**

Results of basic radicals studies.

S.NO	Parameter	Observation	Result
1	Test for Lead	-	Negative
2	Test for Copper	-	Negative
3	Test For Aluminium .	-	Negative
4	Test For Iron .	Red colour appeared	Positive
5	Test For Zinc	-	Negative
6	Test for Calcium	-	Negative
7	Test For Magnesium	-	Negative
8	Test For Ammonium	-	Negative
9	Test For Potassium	-	Negative
10	Test For Sodium	-	Negative
11	Test For Mercury	-	Negative
12	Test For Arsenic	-	Negative

Interpretation

The basic radical test shows the presence of **Iron,** and absence of heavy metals such as lead, arsenic and mercury.

Miscellaneous

S.NO	Parameter	Observation	Result
1	Test for Starch	-	Negative
2	Test for Reducing sugars	-	Negative
3	Test For Alkaloids	Yellow colour developed	Positive
4	Test For Tannic acid	Blue-black precipitate obtained	Positive
5	Test for unsaturated compounds	-	Negative
6	Test for Amino acid	-	Negative
7	Test For type of compounds	Blue colour developed.	Positive

Interpretation

The Miscellaneous test shows the presence of **Alkaloid, Tannic acid, Type of Compounds.**

CLINICAL STUDIES

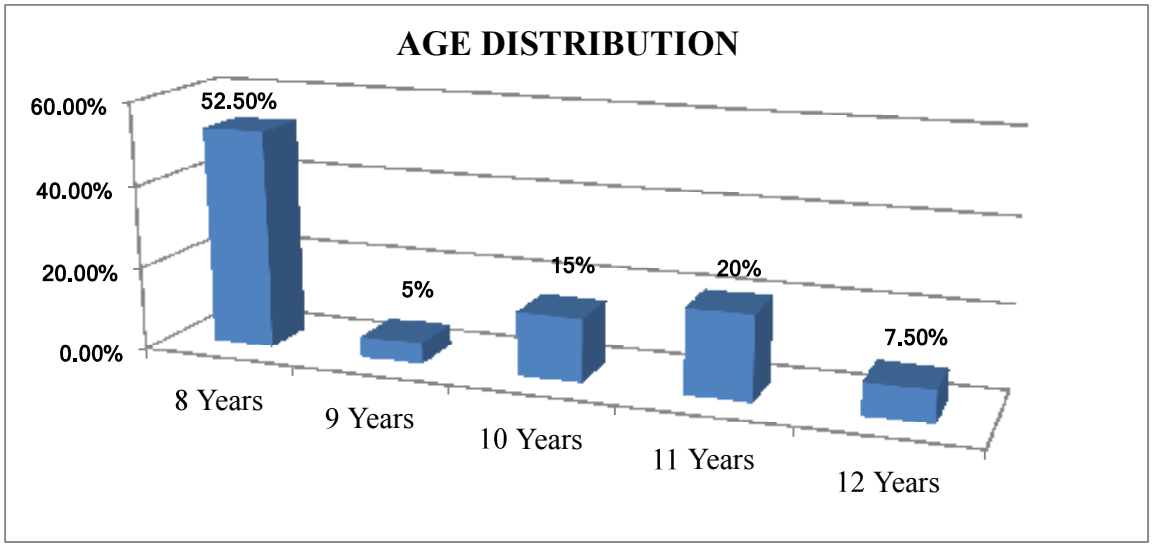
For this clinical study 40 cases were selected and treated in the In-patient department and Out-patient department of P.G Kuzhanthai Maruthuvam, Ayothidoss Pandithar Hospital National Institute of Siddha, Chennai 47. Results were observed with respect to the following criteria

Results were observed with respect to the following criteria:

1. Age distribution
2. Sex distribution
3. Religious distribution
4. Socio-economic status
5. Dietary habits
6. Reference to Thinai
7. Seasonal reference
8. Habitual Disorders
9. Reference to Duration of illness
10. Reference to Mukkutra Kaalam
11. Reference to Udal Kattukal
12. Reference to Envagai Thervukal
13. Neikuri reference
14. Reference to clinical features
15. Refence to Lab investigations
16. Statistical analysis

Table1. Distributions of patients with *Keerinoi* according to Age

S.No	Age	No of cases	Percentage
1.	8 Years	21	52.5%
2.	9Years	2	5%
3.	10 Years	6	15%
4.	11 Years	8	20%
5.	12 Years	3	7.5%

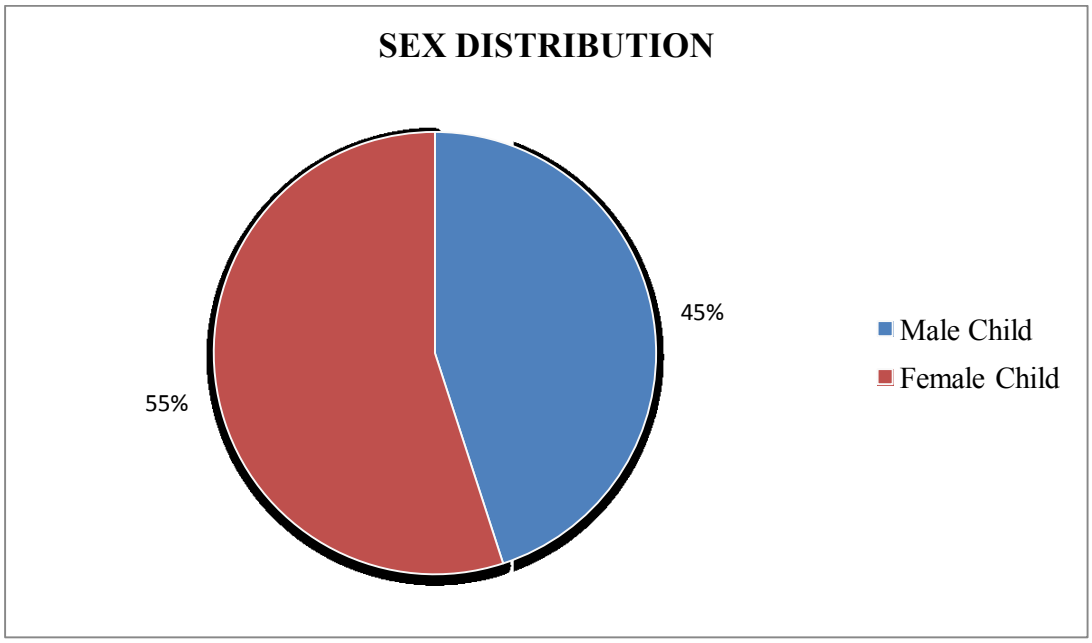


Inference

Among the 40 patients treated, 21 cases (52.5%) belongs to 8 years, 2 cases (9%) belongs to 9 years, 6 cases (15%) belongs to 10 years, 8 cases (20%) belongs to 11 years and 3 cases (7.5%) belongs to 12 years.

Table 2 Distributions of patients with *Keerinoi* according to Gender

S.No	Sex	No of Cases	Percentage
1.	Male Child	18	45%
2.	Female Child	22	55%

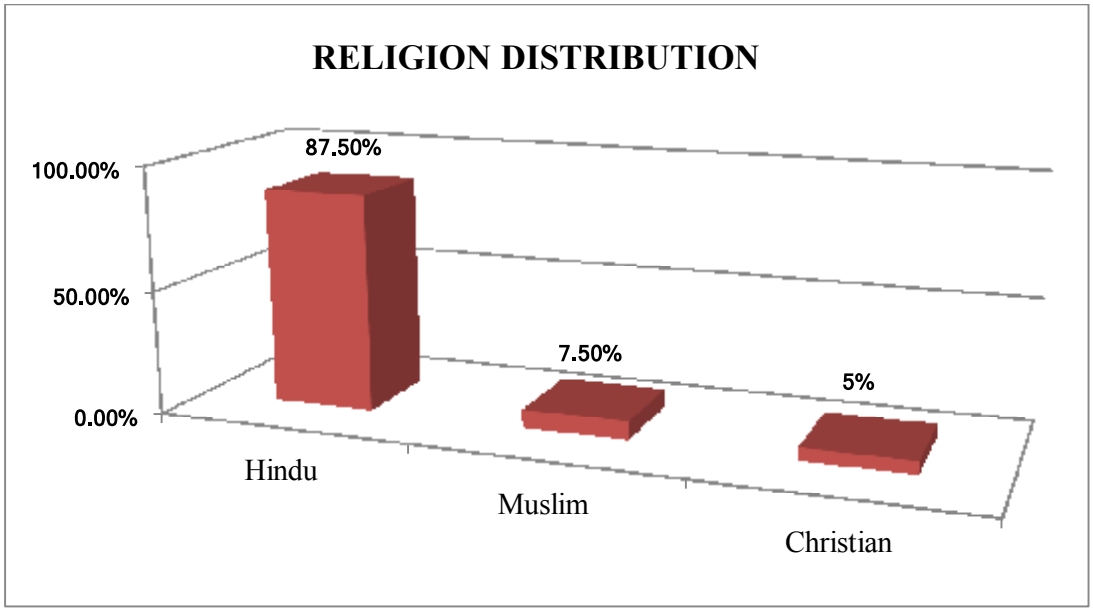


Inference:

Among the 40 patients selected 55% were male children and 45% were female children

Table 3. Distribution of patients with *Keerinoi* according to Religion

S.No	Religions	No of Cases	Percentage
1.	Hindu	35	87.5%
2.	Muslim	3	7.5%
3.	Christian	2	5%

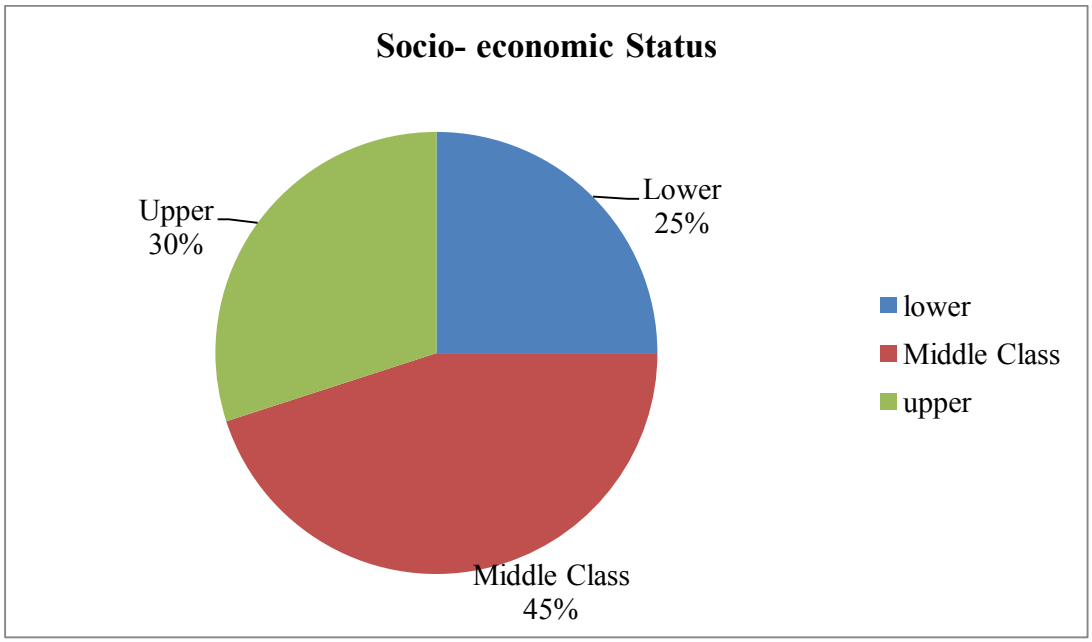


Inference

Among 40 cases, 87.5 % of the cases belongs to Hindu religion , 7.5 % belongs to Muslim and 5 % belongs to Christian religion

Table 4. Distribution of patients with *Keerinoi* according to socio-economic status

S.No	Socio-economic Status	No of Cases	Percentage
1.	Lower	10	25%
2.	Middle class	18	45%
3.	Upper	12	30%

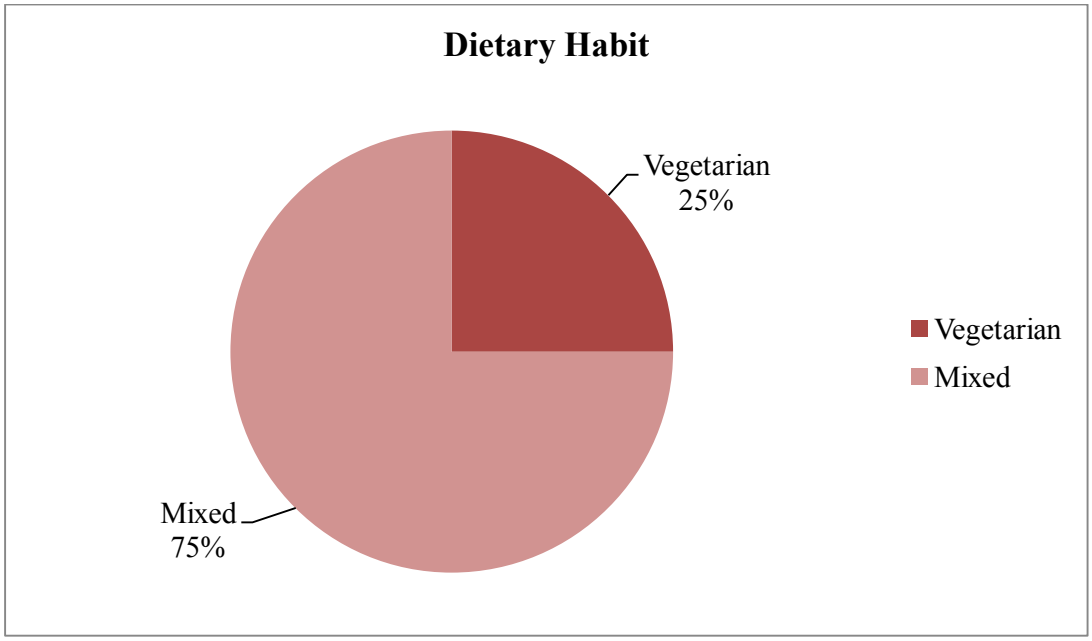


Inference

Out of 40 cases, 30% of cases belong to Upper class status, 45 % of the cases belong to middle class status and 25 % of the cases belong to low economic status.

Table 5. Distribution of patients with *Keerinoi* according to Diet reference

S.No	Food habits	No.of Cases	Percentage
1.	Vegetarian	10	25%
2.	Mixed	30	75%

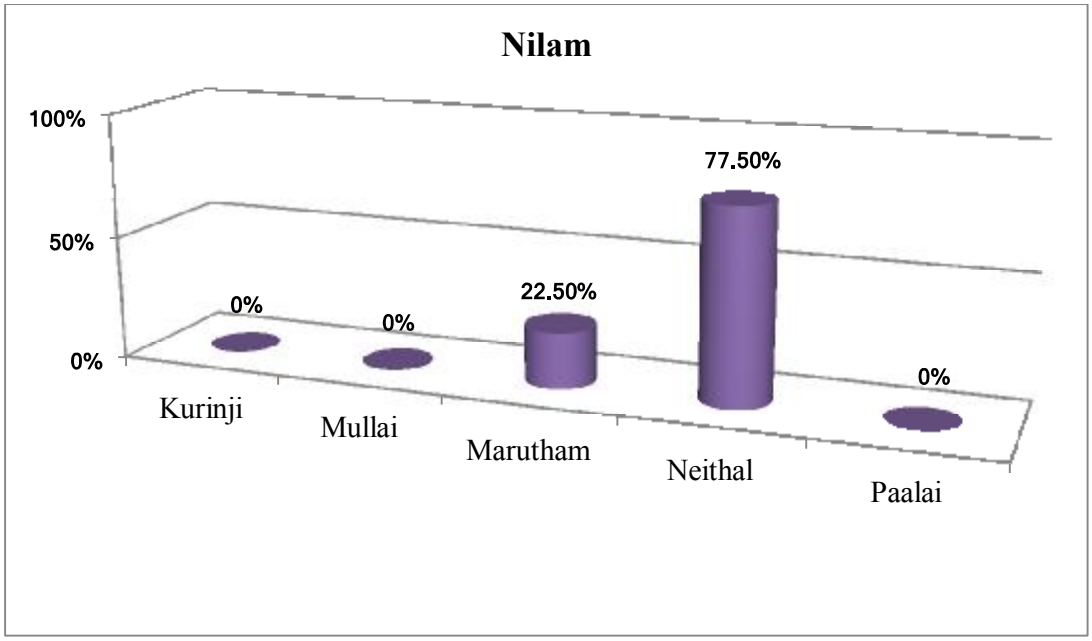


Inference

Out of 40 cases , 75 % of the cases are with Mixed diet and about 25 % of the cases are with Vegetarian diet habit.

Table 6. Distribution of patients with *Keerinoi* according to Nilam

Nilam	No of cases	Percentage
Kurinji	0	0%
Mullai	0	0%
Marutham	9	22.5%
Neithal	31	77.5%
Paalai	0	0%

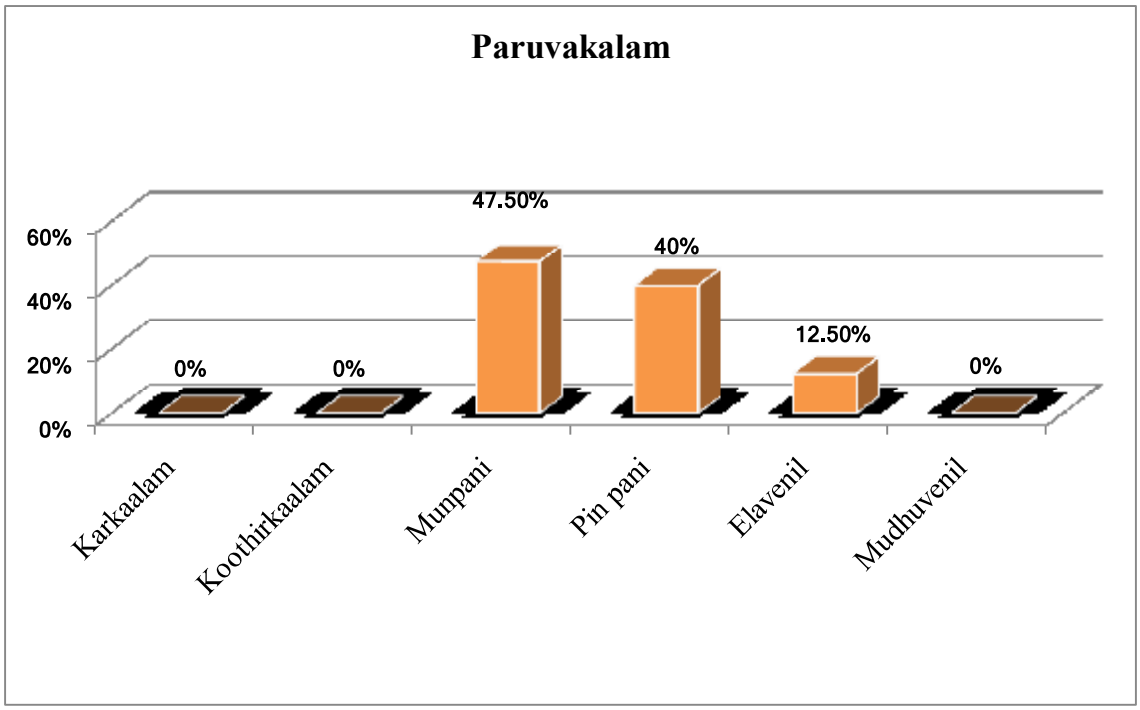


Inference

Among the 40 cases, 22.5% belongs to Marutha nilam and 77.5% belongs to Neithal nilam.

Table 7. Distribution of patients with *Keerinoi* according to Paruvakalam

S.No	Paruvakaalam	No. of cases	Percentage
1.	Karkaalam (Avani – puratasi)	0	0%
2.	Koothirkaalam (Iyppasi – karthikai)	0	0%
3.	Munpani (Markazhi – Thai)	19	47.5%
4.	Pin pani (Masi – Panguni)	16	40%
5.	Elavenil (Chitirai, Vaigasi)	5	12.5%
6.	Mudhuvenil (Aani, Aadi)	0	0%

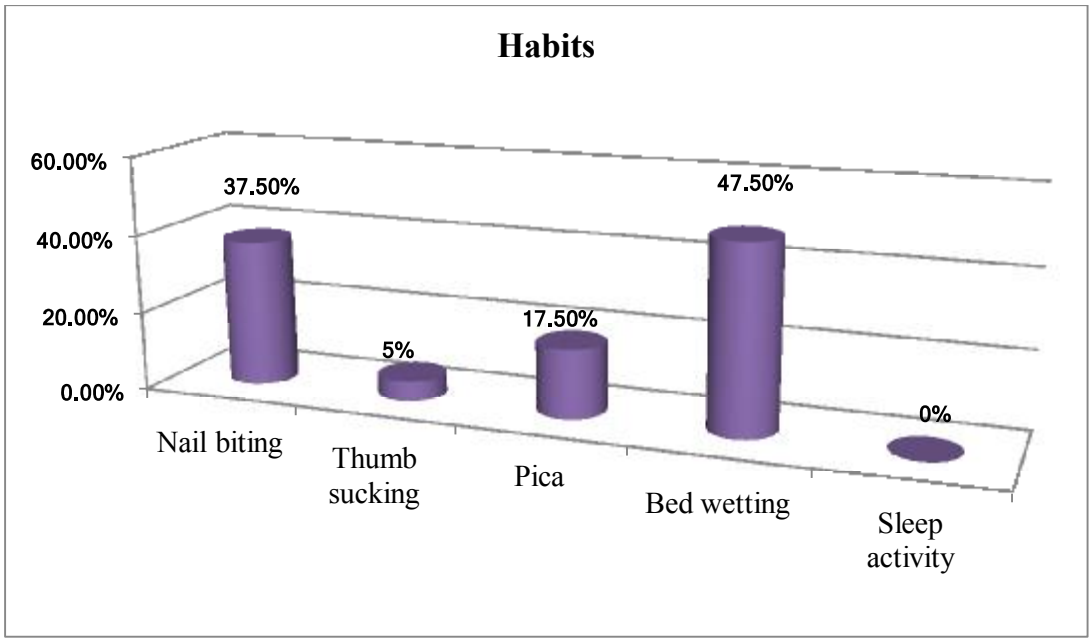


Inference

Out of 40 patients treated, 19 patients had been treated in Munpani kaalam (47.5%), 16 patients in Pinpani kaalam (40%) and 5 patients in Elavenil kaalam (12.5).

Table 8. Distribution of patients with *Keerinoi* according to Habits

Habits	No of cases	Percentage
1.Nail biting	15	37.5%
2.Thumb sucking	2	5%
3.Pica	7	17.5%
4.Bed wetting	19	47.5%
5.Sleep activity	0	0%

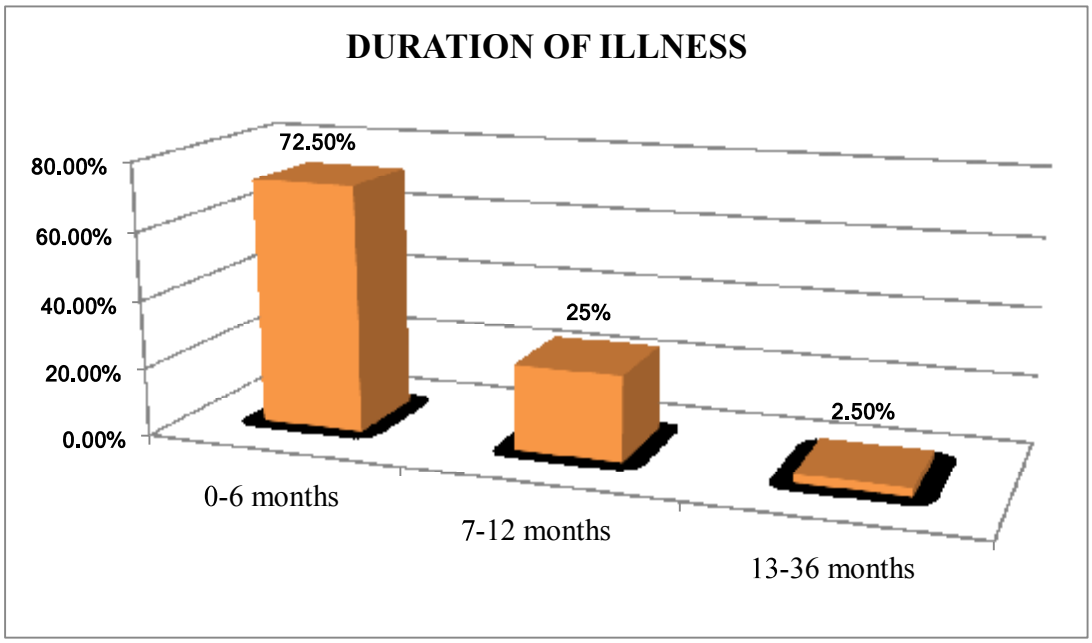


Inference

Out of 40 cases , 37.5% of cases had an habit of Nail bitting, 5% cases had Thumb sucking, 17.5% had pica and Bed wetting for about 47.5%.

Table 9. Distribution of patients with *Keerinoi* according to Duration of illness

S.No	Duration	No of Cases	Percentage
1.	0-6 months	29	72.5%
2.	7-12 months	10	25%
3.	13-36 months	1	2.5%

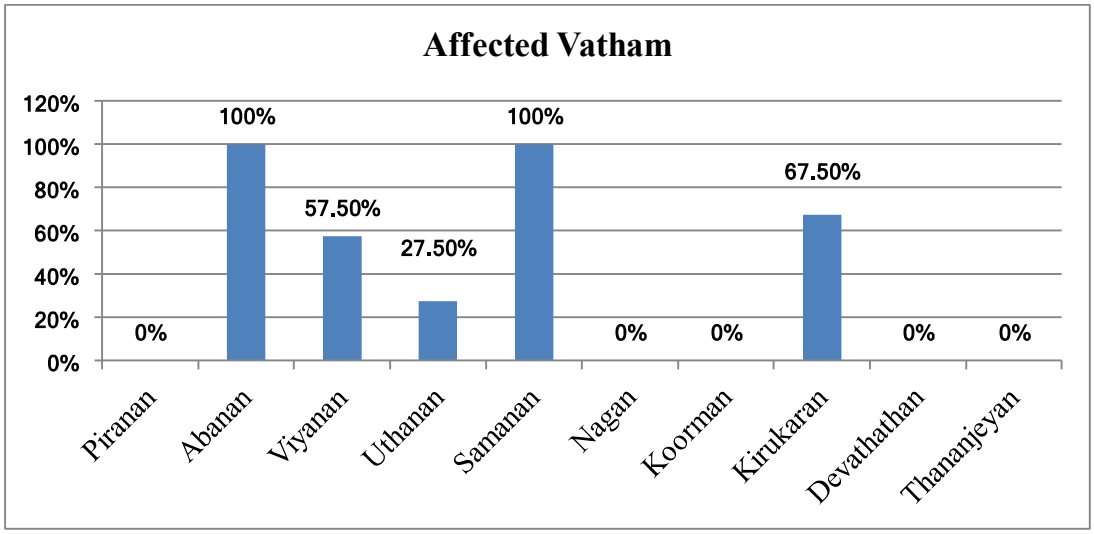


Inference

Among 40 cases, 72.5 % of cases had their illness within 6 months ,25 % of cases had their illness durated between 7 to 12 months, and 2.5% of cases had their illness durated between 13 to 36 months

Table 10a. Distribution of patients with *Keerinoi* according to derangement of Vatham

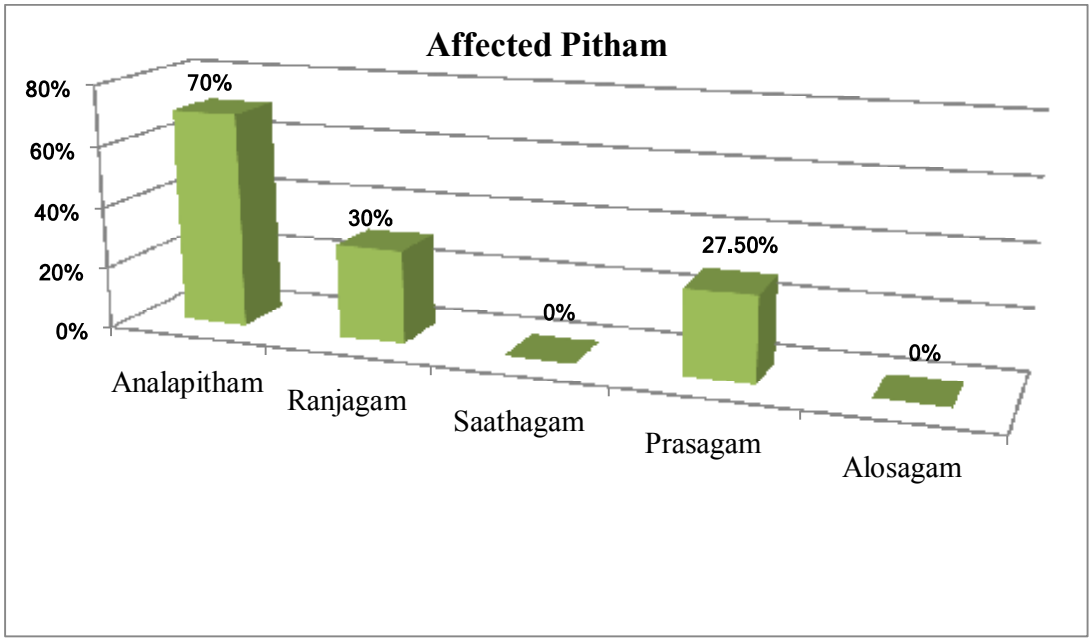
S.No	Classification of vatham	No. of Cases	Percentage
1.	Piranan	0	0%
2.	Abanan	40	100%
3.	Viyanan	23	57.5%
4.	Uthanan	11	27.5%
5.	Samanan	40	100%
6.	Nagan	0	0%
7.	Koorman	0	0%
8.	Kirukaran	27	67.5%
9.	Devathathan	0	0%
10.	Thananjeyan	0	0%



Inference: According to vatham, derangement of Abanan, Samanan was 100%, Viyanan was affected 57.5% Uthanan was affected in 27.5%, Kirukaran was affected in 67.5%.

Table 10b. Distribution of patients with *Keerinoi* according to derangement of Pitham

S.No	Types of pitham	No.of Cases	Percentage
1.	Analapitham	28	70%
2.	Ranjagam	12	30%
3.	Saathagam	0	0%
4.	Prasagam	11	27.5%
5.	Alosagam	0	0%

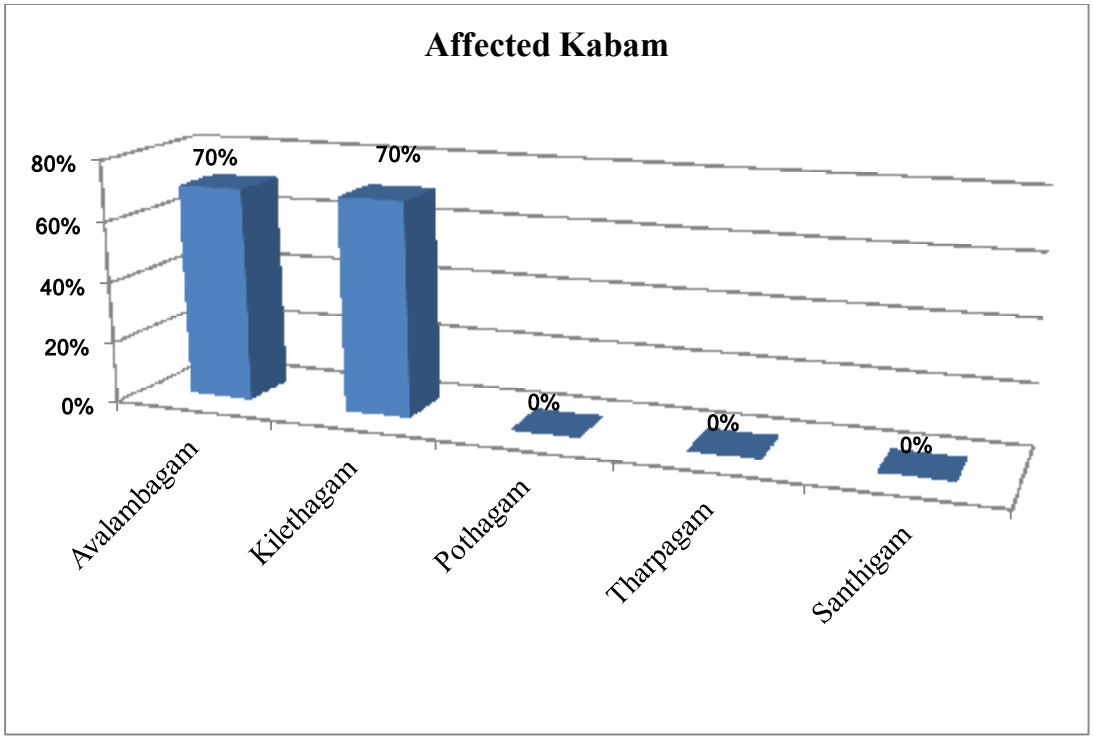


Inference

Among 5 types of Pitham Analam affected by 70% , Ranjaga pitham by 30% and Pirasagam by 27.5%.

Table 10c. Distribution of patients with *Keerinoi* according to derangement of Kabam

S.No	Types of Kabham	No.of Cases	Percentage
1.	Avalambagam	0	0%
2.	Kilethagam	28	70%
3.	Pothagam	0	0%
4.	Tharpagam	0	0%
5.	Santhigam	0	0%

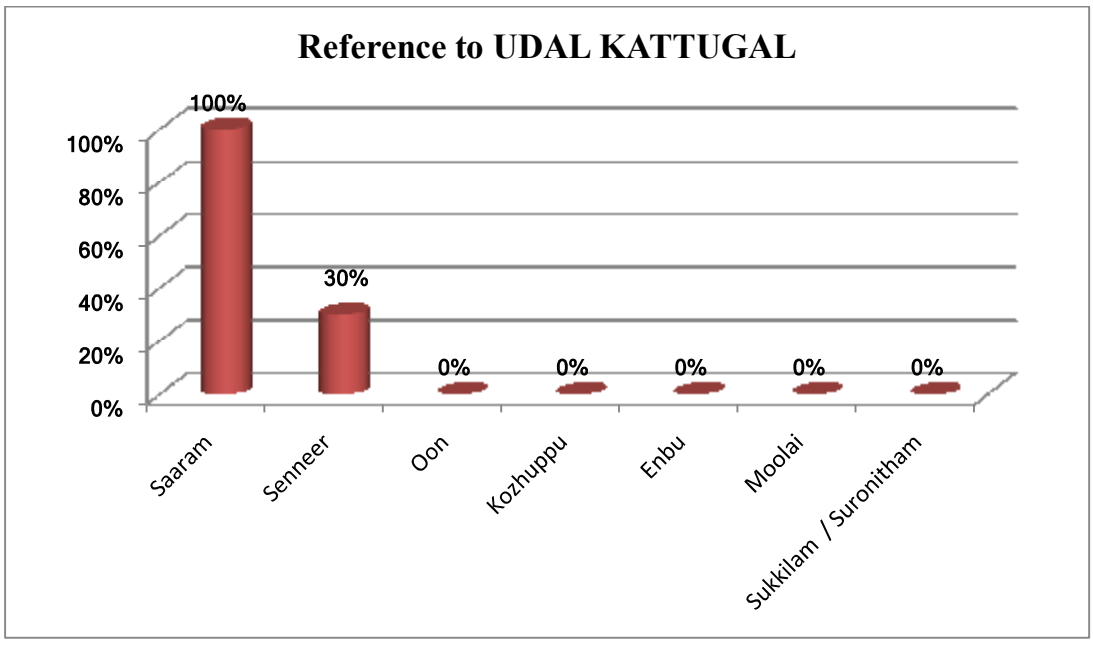


Inference

Avalambagam and Kilethagam was affected in 28 cases about 70 %.

Table 11. Distribution of patients with Keerinoi according to derangement of Ezhu Udalkattugal

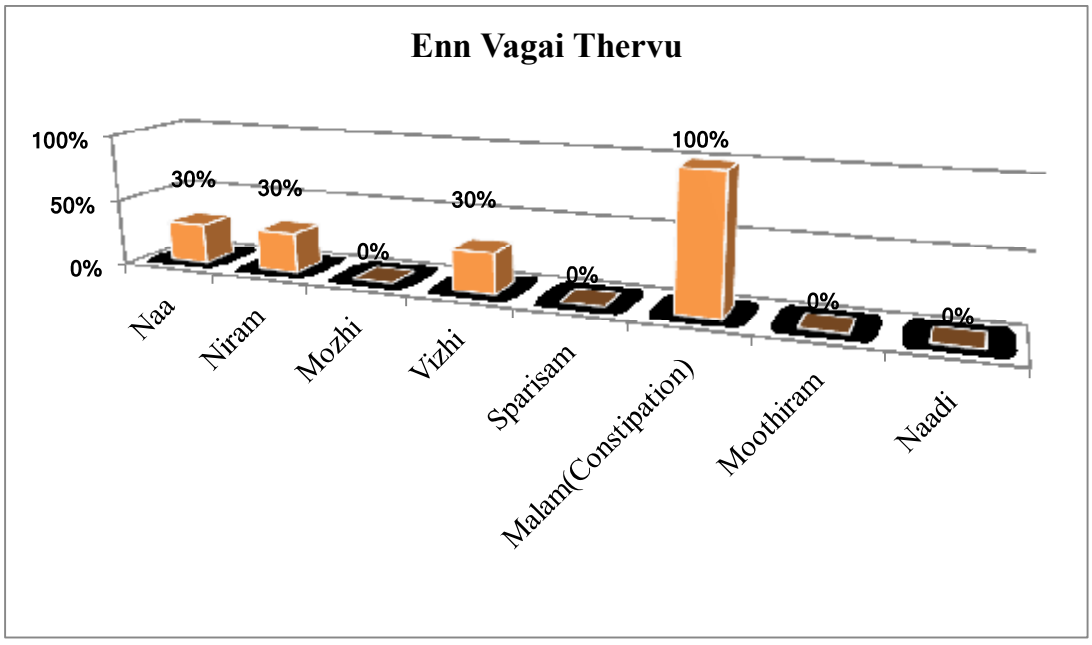
S.No	Udal kattugal	No.of Cases	Percentage
1.	Saaram	40	100%
2.	Senneer	12	30%
3.	Oon	0	0%
4.	Kozhuppu	0	0%
5.	Enbu	0	0%
6.	Moolai	0	0%
7.	Sukkilam / Suronitham	0	0%



Inference; In seven Udal Kattukal, Saaram and Senneer were affected among 100 % and 30% respectively.

Table 12. Distribution of patients with *Keerinoi* according to derangement of Enn vagai thervugal

S.No	Enn Vagai Thervugal	No.of Cases	Percentage
1	Naa	12	30%
2	Niram	12	30%
3	Mozhi	0	0%
4	Vizhi	12	30%
5	Sparisam	0	0%
6	Malam(Constipation)	40	100%
7	Moothiram	0	0%
8	Naadi	0	0%

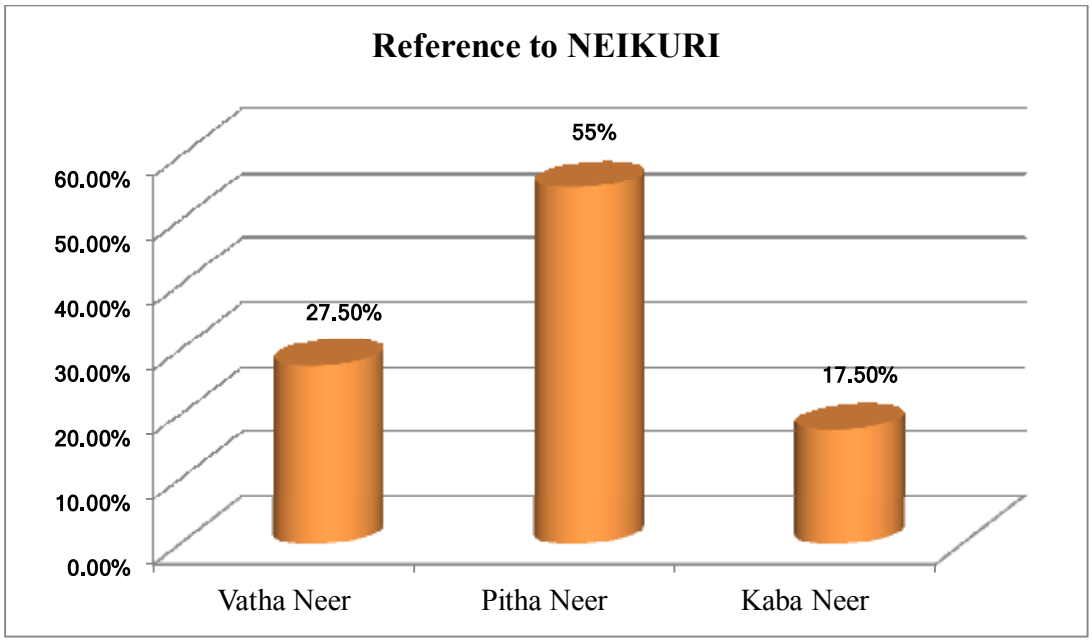


Inference

Among the Ennvagai thervukal, Naa was affected in 30% of cases, Niram in 30% of cases and Vizhi were affected in 30 % of the cases. Malam was affected in all 40 cases (100%).

Table 13. Distribution of patients with *Keerinoi* according to observation of Neikuri analysis

S.No	Character of urine	Neikuri Reference	No.of Cases	Percentage
1.	Spreads like snake	Vatha Neer	11	27.5%
2.	Spreads like ring	Pitha Neer	22	55%
3.	Static as pearl	Kaba Neer	7	17.5%

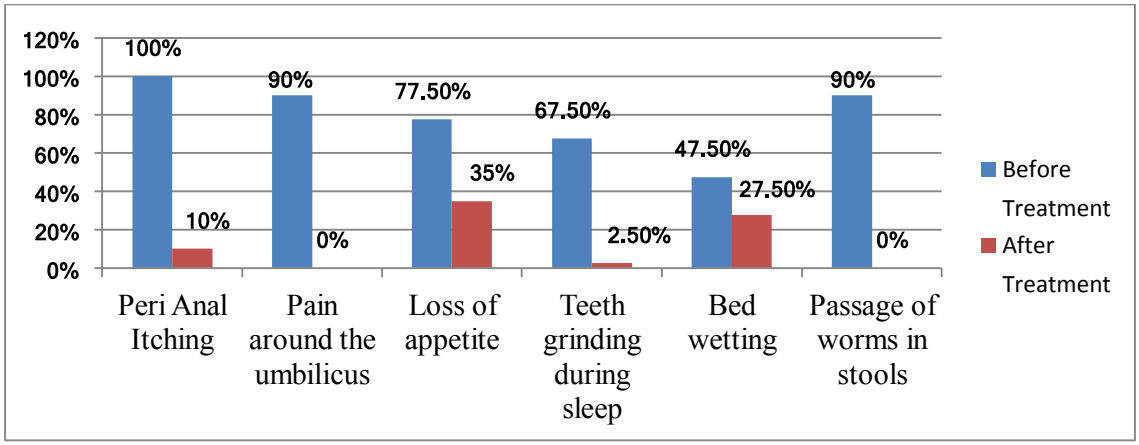


Inference

Among the 40 patients in Neikuri 27.5% of cases were seen as Vatha neer, 55% of cases were seen as Azhal neer and 17.5% were Kaba neer

Table14. Distribution of patients with *Keerinoi* according to Clinical features

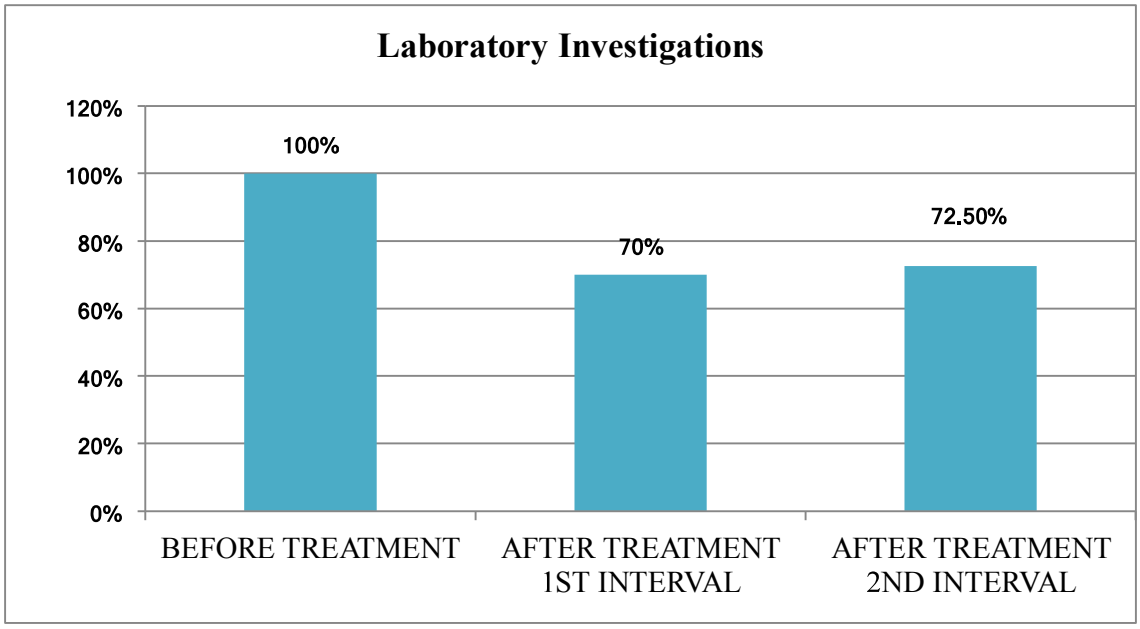
Sl.No	Clinical Features	No of patients observed before treatment	percentage	No of patients observed after treatment	Percentage
1.	Peri Anal Itching	40	100%	4	10%
2	Pain around the umbilicus	36	90%	0	0%
3	Loss of appetite	31	77.5%	14	35%
4	Teeth grinding during sleep	27	67.5%	1	2.5%
5	Bed wetting	19	47.5%	11	27.5%
6	Passage of worms in stools	36	90%	0	0%



Inference: The clinical features recorded among the 40 cases revealed Peri anal itching(100%), Pain around the umbilicus (90%),Loss of appetite (77.5%), Teeth grinding during sleep (67.5%), Bed wetting(47.5%),Passage of worms in stools(90%) before treatment . The symptoms showed a good prognosis after treatment with reduced percentage of clinical features as 10% 0 % , 35%, 2.5%, 27.5%, 0% respectively.

Table 15. Distribution of patients with Keerinoi according to Laboratory investigations

S.NO	Before treatment		After treatment negative investigation @ 1st interval		After treatment negative investigation @ 2nd interval	
1	No of cases	Percentage	No of cases	Percentage	No of cases	Percentage
	40	100	28	70	29	72.5



Inference

Out of 40 cases , 70% of the cases on investigation at I interval shows absence of ova and cyst and 72.5 % of the cases shows absence by II interval.

LABORATORY INVESTIGATIONS RESULTS

SCOTCH TAPE TEST RESULTS

S.no	Op number	Before treatment	After treatment negative investigation @ 1st interval	After treatment negative investigation @ 2nd interval
1	H30799	Pin worm ova +	Negative	Negative
2	H12097	Pin worm ova +	Negative	Negative
3	H16270	Pin worm ova +	Negative	Negative
4	G90685	Pin worm ova +	Negative	Negative
5	E90508	Pin worm ova +	Pin worm ova +	Pin worm ova +
6	E076632	Pin worm ova +	Negative	Negative
7	H15753	Pin worm ova +	Negative	Negative
8	H13904	Pin worm ova +	Negative	Negative
9	G91767	Pin worm ova +	Negative	Negative
10	G89242	Pin worm ova +	Pin worm ova +	Pin worm ova +
11	H22352	Pin worm ova +	Negative	Negative
12	G89105	Pin worm ova +	Negative	Negative
13	G89538	Pin worm ova +	Negative	Negative
14	H30286	Pin worm ova +	Pin worm ova +	Pin worm ova +
15	G97816	Pin worm ova +	Negative	Negative
16	H09253	Pin worm ova +	Negative	Negative
17	H28016	Pin worm ova +	Negative	Negative
18	H13906	Pin worm ova +	Negative	Negative
19	G81309	Pin worm ova +	Negative	Negative
20	H29993	Pin worm ova +	Pin worm ova +	Pin worm ova +
21	G75288	Pin worm ova +	Negative	Negative
22	D02683	Pin worm ova +	Negative	Negative
23	G76842	Pin worm ova +	Pin worm ova +	Pin worm ova +
24	H28017	Pin worm ova +	Negative	Negative
25	H02315	Pin worm ova +	Pin worm ova +	Pin worm ova +
26	G80270	Pin worm ova +	Negative	Negative

27	H17908	Pin worm ova +	Negative	Negative
28	G24110	Pin worm ova +	Negative	Negative
29	G76580	Pin worm ova +	Pin worm ova +	Pin worm ova +
30	H32426	Pin worm ova +	Negative	Negative
31	H09430	Pin worm ova +	Negative	Negative
32	H20683	Pin worm ova +	Negative	Negative
33	G50754	Pin worm ova +	Negative	Negative
34	G76580	Pin worm ova +	Pin worm ova +	Pin worm ova +
35	H17446	Pin worm ova +	Negative	Negative
36	H62705	Pin worm ova +	Negative	Negative
37	H21122	Pin worm ova +	Pin worm ova +	Negative
38	G82344	Pin worm ova +	Pin worm ova +	Pin worm ova +
39	H39484	Pin worm ova +	Pin worm ova +	Pin worm ova +
40	H44725	Pin worm ova +	Pin worm ova +	Pin worm ova +

16.Statistical analysis

All collected data were entered into MS Excel software using different columns as variables and rows as patients. STATA software was used to perform statistical analysis. Basic descriptive statistics include frequency distributions and cross- tabulations were performed. Bar diagram, Pie charts were used to describe the value of different variables for pictorial representation. The quantity variables were expressed as Mean and standard deviation and qualitative data as percentage. A probability value of less than 0.05 was considered to indicate as statistical significance. Paired 't' test was performed for determining the significance between before and after treatment.

Clinical Symptoms score before and after treatment

Treatment	Mean ± Std Dev	95% of C.I	Significance (t, p)
Before (40)	4.725 ± 0.98	4.4 to 5.04	32.75
After (40)	0.75± 0.8	.49 to 1.00	P <0.0001

The mean and standard of clinical symptoms score of Keerinoi, before and after treatment were 4.725± 0.98 and 0.75 ± 0.8 respectively which is statistically highly significant (t-vale-32.75,P<0.0001).The reduction of clinical symptom score from the start of the treatment is 84% at the end of the treatment.

Discussion

6.DISCUSSION

Keeri noi is one of the most common illness in children which remains as the common aetiological factor for anaemia, malnutrition. Keeri noi is caused mainly due to food and water contamination, improperly cooked food unhygienic sanitary habits. It is widespread among school children. The symptoms of Keeri Noi are found to be varying according to the siddha literature. On compiling the evidences, the Keeri Noi may be correlated with mixed worm infestation. The present study is mainly focused to find the efficacy of Elisevi kudineer in treating Pinworm. Eventhough there are many health care programmes to control the Worm infestation especially in children, the goal of achievement is yet to attain in end user level.

The drugs which are mentioned in Siddha literature for the management of Keerinoi were selected and the study is conducted after the proposal was screened by the Screening committee of National Institute of Siddha and the trial was also approved by the Institutional Ethical Committee (IEC) approval no:NIS/IEC/8-14/23-26-08-2014. The trial was registered in Clinical trial registry of India registration no: CTRI/2016/05/006934.

Physico-chemical analysis was done as preliminary evaluation on Elisevi kudineer. The method of measuring the moisture content in solid or semi-solid materials is loss on drying (LOD). Low moisture content is always desirable for higher stability of drugs.In Elisevi kudineer, the loss on drying at 105^0C was found to be 8.69%, it falls in between the limit range (1-20%). So the determination of moisture content shows the good stability of the drug Elisevi kudineer.

The ash values represent the purity of the drugs. The total ash includes “physiological ash”, which is derived from the organic matter, and “non-physiological” ash, which is the residue of the extraneous matters like sand/soil, inorganic materials. The non-physiological ash is represented by acid insoluble ash. The total ash in Elisevi kudineer found to be 4.79%, and the acid insoluble ash to be 0.53%. The both ash value were under limits. Theminimal level of acid insoluble ash shows the less inorganic residue and purity of the drug Elisevi kudineer.

The extractive values helps to indicate the nature of chemical constituents present in the drug. The water soluble substance is polar in nature and the alcohol has the ability to dissolve non-polar substance. The water soluble extract value of Elisevi kudineer is 28.85% and the Alcohol soluble extractive is 20.45%, it shows the possibility of water

soluble constituents such as tannins, resins and alkaloids to be present in the drug. The drug will show good absorption.

Qualitative chemical analysis of the trial drug revealed the presence of starch, tannins, Chloride, phosphate, iron and alkaloids. Presence of iron increases the Hb level.

The patients were recruited for the trial based on inclusion and exclusion criteria and after getting the consent from the patient. 40 patients were included in this study. The 40 patients were treated in OPD of Ayothidoss Pandithar Hospital of National Institute of Siddha. Separate proforma was maintained for every patient. Progress chart was also maintained to monitor the clinical signs and symptoms of the disease.

The treatment was aimed at normalizing the deranged thodams and providing relief from symptoms.

The patients were treated with trial drug Elisevi kudineer for 3 days. Patients were instructed to take the medicines regularly and advised to follow pathiyam.

After completion of the study, the patients were advised to visit the Out-Patient ward of Department of Kuzhanthai Maruthuvam for 1 month for follow-up. The results observed during the study period were discussed by the author below.

This study evaluates the effect of "*Elisevi kudineer*" in relieving the symptoms of *Keeinoi.*

CLINICAL REVIEW

Sex

By the results of the clinical study, Female children (55%) were affected more than male children (45%). But there is no reference regarding the incidence of Keeri Noi to a particular sex according to Siddha literatures.

Age

The age limit for the cases taken for study ranged from 8 to 12 years. Among the affected children (52.5%) were found to be with the age of 8years,(5%) were found to be with the age of 9 years, (15%)were found to be with the age of 10 years and (20%) were found to be with the age of 11 years , (7.5%) were found with the age of 12 years.

Socio-economic status

About (25%) patients were under lower income group, (45%) patients were under middle income group and (30%) patients were under high income group. The highest incidence occurred in middle income group and also affects lower and upper income group.

Duration of illness

From the results, the duration of illness of the participants were more within 6 months of duration about (72.5%).

Kaalam

Most of cases, subjected to this study reported predominantly in Munpani (47.5%) and Pinpani Kaalam (40%) less in Elavenil (12.5%).

Thinai

Among 40 cases, (77.5%) were from Neithal Nilam, (22.5) were from Marutham Nilam according to the literatures.

Food habits

According to food habits (75%) cases had mixed diet, and (25%) vegetarian diet. The highest incidence of cases was observed in mixed diet of food habits.

Habitual disorder

For all 40 cases recruited, (47.5%) of the case reported for having the habit of Bed wetting, (37.5%) with the habit of Nail bitting, (17.5%) with habit of Pica, and (5%) have the habit of Thumb sucking. Thus the result concludes that the higher incidence of habitual nail bitting cause this disease which further leads to bed wetting.

Mukkutram

Vali (Vatham)

Due to the derangement of different vatha the following symptoms occur. Abanan was affected in (100%) cases and causes constipation, Itching around the anal and Passage of worms. Samanan was affected in (100%) cases and fails to neutralize the other vayus.Uthanan was affected in (27.5%) of cases and causes Teeth grinding during sleep, Viyanan was affected in (57.5%) of cases and causes Pain around the umbilicus and Kirukaran was affected in (67.5%) and causes Loss of appetite.

Azhal (Pitham)

Due to the derangement of Pitham the following symptoms occur. Analapitham was affected (70%) and causes poor appetite. Ranjakam was affected (30%) and causes Pallor of skin. Prasagam was affected (27.5%) and causes pallor of skin.

Iyyam (Kabam)

Deranged Avalambagam was affected (100%) .Klethagam was affected (70%) and causes loss of appetite.

Udal Kattukal

In this study, Saaram and Senneer were affected in (100%) of the cases and (30%) respectively.

Envagai Thervukal

Naa, Niram, Vizhi, were affected in (12%), (12%) (12%) of cases respectively and Malam was affected in (100%) of cases. The diagnosis was made on the basis of Envagai Thervukal and available modern investigation methods.

Neikuri

In the present study, (27.5 %) of patient had vatha neikuri, (55%) was observed as pitha neikuri and (17.5%) was observed as kaba neikuri.

Clinical Features

The clinical features recorded as Peri anal itching(100%), Pain around the umbilicus (90%), Loss of appetite (77.5%), Teeth grinding during sleep (67.5%), Bed wetting(47.5%),Passage of worms in stools(90%) before treatment . The symptoms showed a good prognosis after treatment with reduced percentage of clinical features as (10%) (0 %) , (35%), (2.5%), (27.5%),(0%) respectively.

The reduction of clinical symptom score from the start of the treatment is 84% at the end of the treatment.

Lab Investigation:

Routine motion examination were done before the treatment. Scotch tape test for Ova and cyst was done at I and II interval shows (70%) and (72.5%) of results with absence of ova and cyst.

Drug review

The pharmacological studies already reported on the individual drugs also favour its effect in disease Pinworm as given below:

Elisevi have a potent Antianthelmintic activity and Antioxidant activity.

Vaividangam have mainly an Antianthelmintic activity.

Murungaipattai have Antianthelmintic activity .

Kadukai. Nellikai,Thandrikai have Antianthelmintic activity and Antioxidant activity.

Treatment

In this study all 40 cases were treated with Elisevi kudineer. The study shows that the trial drug have the property to neutralise the deranged vital humours and expels the Keeri Poochi in children. The clinical symptoms of the children show a bigger variance before and after treatment. The Scotch tape test by the first interval shows only (70 %) of absence of ova and cyst .It should also be noted that by the Scotch tape test at II interval shows that (72.5%) of absence of ova and cyst after treatment.

Statistical analysis

The datas from the clinical study are analysed statistically and found that the results were significant and the drug showed a good results. The clinical symptom score of Elisevi kudineer, before and after treatment were 4.725± 0.98 and 0.75 ± 0.8 respectively which is statistically significant. (t-vale-32.75,P<0.0001).

No adverse effect reported clinically throughout the study period.

The prior studies on the individual drugs for the anthelmintic activity also favours the effect of the trial drug to this disease Keeri Noi.

However the study was primarily limited by its small sample size. An earlier start in data collection would have increased the time needed to survey more recruitments. Ideally the participants of the study represented a narrow range of locality, ethnicity and age. A larger sample with more diversity would have benefit the study on exploring the identity of Keeri Noi

Summary

7.SUMMARY

Patients attending the OPD of NIS having the compliants of Keerinoi diagnosed clinically and the patients were observed for clinical diagnosis. Clinical symptoms of Keerinoi emphasis with the symptoms of Thread worm like Itching around the anal region, pain around the umbilicus, loss of appetite, bed wetting, Teeth grinding during sleep, Passage of worms in stools.

Clinical diagnosis of Keerinoi was done on the basis of the clinical features described in Balavagadam text.

Clinical studies were carried out after obtaining getting approval from IEC of Institute of Siddha and the trial was registered in Clinical trial registry of India. The medicines were prepared after obtaining proper authentication from Medicinal Botany Department. Chemical analysis, physicochemical analysis ,Pharmacological activity (Anti anthelmintic) for the drugs was performed.

The patients with Keerinoi were recruited based on Inclusion and Exclusion criteria and a detailed study was done. Separate proforma was maintained for each patient along with daily progress chart to monitor the prognosis.

The chemical analysis of drugs shows the presence of Chloride, Phosphate, Iron, Starch, Tannins,and alkaloids.

The physicochemical analysis showed the trial drug is in appropriate consistency for trial study. The patients have not complained of any adverse effects or difficulties during the course of treatment. Thus the drug is found to be safe and effective in the management of Keerinoi.

The clinical efficacy of the drug was analyzed statistically on all the symptoms mentioned in the assessment criteria.

The observation made during the clinical study showed that the trail drug Elisevi kudineer was clinically effective on Keerinoi

Conclusion

8.CONCLUSION

The Siddha system of medicines has certainity with safer medications to treat children. In the present study, the trial drug Elisevi kudineer is treated to the children of age group, 8 – 12 years who are all diagnosed to have Keeri Noi

The ingredients of Elisevi kudineer are feasible and useful; These compounds may serve as potentially useful drug at a lower cost.

The medicine has many properties to control the signs and symptoms of Keeri Noi.

During the course of treatment, no adverse interactions were observed.

Clinical improvement has been noted and analysed statistically which implies the trial drug has very significant result 84% and the lab investigation shows 72.5% cases with good results.

The present clinical study has established that Elisevi kudineer is having good result in reducing the majority of symptoms of the Keeri noi and in expeling Keeri Poochi.

Further studies are required to establish its mechanism of action. By encouraging result of above study the drug may be taken for larger study in treatment of Keeri Noi.

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- Sarakku suthi seimurigal
- Sigiccha rathna deepam
- Dr.k.Na.Kuppusamy - Siddha Maruthuvam Podhu
- Dr.M. Shanmugavelu - Nooi Nadal Noi Mudhal Nadal Thiratu –Part(1)
- Dr.A.Sundarrasan - Pillaippini; Maruthuvam

- Siddha Maruthuvanga Surkkam
- Madhalai Noi Thoguthi.
- Kumbamuni Balavagadam.

Annexure

9.ANNEXURE

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 600047.

DEPARTMENT OF KUZHANDHAI MARUTHUVAM

A CLINICAL EVALUATION OF "ELISEVI KUDINEER"FOR KEERINOI IN CHILDREN-

AN OPEN CLINICAL STUDY

FORM-1 SCREENING FORM

1. Scr. No:	2. OP No:	3.Name:
4. Age:	5.Sex:	6.Date of Screening:
7. Date of completion:	8.Informant:	9.Reliablity:

INCLUSION CRETERIA:	YES	NO
1. Age: between 8-12 years	☐	☐
2. Having complaints of Loss of appetite	☐	☐
3. Presence of peri anal itching	☐	☐
4. Pain around the umbilicus	☐	☐
5. Teeth grinding during sleep	☐	☐
6. Bed wetting	☐	☐
7. History of passing worms in the stools	☐	☐
8. Positive investigation of ova and cyst of worms	☐	☐
EXCLUSION CRITERIA:		
1.Amebiasis.	☐	☐
2.Patient infested with round worm	☐	☐
3.Patient infested with hook worm.	☐	☐
4.Negative investigation of ova and cyst of worms.	☐	☐

ADMITTED TO TRIAL: YES ☐ NO ☐ IF YES, SERIAL NO: ☐

Signature of the Investigator:

Signature of the Lecturer:

Signature of the HOD:

Date &Station:

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 600047.

DEPARTMENT OF KUZHANDHAI MARUTHUVAM

A CLINICAL EVALUATION OF "ELISEVI KUDINEER"FOR KEERINOI IN CHILDREN - AN OPEN CLINICAL STUDY.

FORM-2- CONSENT FORM

CERTIFICATE BY INVESTIGATOR

I certify that I have disclosed all the details about the study in the terms readily understood by the parent/guardian

Signature _____

Date _____

Name _____

CONSENT BY PARENT

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of drug treatment and follow-up including the laboratory investigations to be performed to monitor and safeguard my son/daughter's body functions.

I am aware of my right to opt my son/daughter out of the trail at any time during the course of the trail without having to give the reasons for doing so.

I, exercising my free power of choice, here by give my consent to include my son/daughter as a subject in the clinical trial of **"ELISEVI KUDINEER"** a Siddha Drug, for the treatment of "**KEERINOI"**

Signature _____

Place: Name _____

Date : Signature of witness _____

Name _____

தேசிய சித்த மருத்துவ நிறுவனம்

அயோத்திதாச பண்டிதர் மருத்துவமனை சென்னை-47

பட்டமேற்படிப்பு குழந்தை மருத்துவத்துறை

எலிச்செவி குடிநீர்பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்வு

ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது.

நான் இந்த மருத்துவ ஆய்வை குறித்த அனைத்து விபரங்களையும் நோயாளியின் பெற்றோருக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதி அளிக்கிறேன்.

தேதி: கையொப்பம்:

இடம்: பெயர்:

நோயாளியின் பெற்றோர் ஒப்புதல் படிவம்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும்,மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறைப் பற்றியும்,இந்த மருத்துவத்தை தொடர்ந்து எனது குழந்தையின் உடல் இயக்கத்தைக் கண்காணிக்கவும்,அதனைத் பாதுகாக்க பயன்படும் மருத்துவ ஆய்வுக்கூடப் பரிசோதனைகள் பற்றியும் திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது காரணம் எதுவும் கூறாமல் எப்போது வேண்டுமானாலும் என் குழந்தையை விடுவித்துக் கொள்ளும் உரிமையை தெரிந்திருக்கிறேன்.

நான் என்னுடைய சுதந்திரமாக தேர்வு செய்யும் உரிமையைக் கொண்டு கீரிநோய்க்கான எலிச்செவி குடிநீர் பரிகரிப்புத் திறனை கண்டறியும் மருத்துவ ஆய்வுக்கு எனது குழந்தையை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி: பெற்றோர் பெயர்

இடம்: கையொப்பம்

சாட்சிக்காரர் பெயர்::

கையொப்பம்

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 600047.

DEPARTMENT OF KUZHANDHAI MARUTHUVAM

A CLINICAL EVALUATION OF "ELISEVI KUDINEER"FOR KEERINOI IN CHILDREN- AN OPEN CLINICAL STUDY.

FORM- 3- CASE REPORT FORM

1.HISTORY TAKING Demographic data

OP/IP No.	Visit Date : (__/__/____)
Name	
Age	
Gender Male ☐ Female ☐	
Father/ Mother /Guardian Name :	
Fathers/Mother Occupation :	
Monthly Income	
Religion	Hindu ☐ Christian ☐ Muslim ☐ Others ☐
Socioeconomic Status	
Informant	
Postal Address Contact No :	

1.Complaints and Duration

2.Present illness

3.History of Past Illness

History /Symptoms/Signs	**Yes**	**No**	**If, Yes Details**
Any Similar Complaints	☐	☐	_____
Hospitalization	☐	☐	_____
Any other	☐	☐	_____

Family History

Any Hereditary/ Familial Disease ☐ Yes ☐ No

If Yes, Details--------

Immunisation History

Immunization complete ☐ Incomplete ☐ Complete but time lag ☐

Food habits:

1. Veg ☐ 2. Non-Veg ☐ 3. Mixed ☐

General assessment	**YES**	**NO**
1. Pica	☐	☐
2. Nail biting	☐	☐
3. Thumb sucking	☐	☐

General Examination	**YES**	**NO**
1. Pallor	☐	☐
2. Jaundice	☐	☐
3. Cyanosis	☐	☐
4. Clubbing	☐	☐

5. Pedal oedema ☐ ☐
6. Lymph adenopathy ☐ ☐

Vital signs:-

1. Pulse rate / mint
2. Heart rate / mint
3. Respiratory Rate / mint
4. Temperature

Anthropometry:-

Height

Weight

SYSTEMIC EXAMINATION:

Gastro intestinal system

a) INSPECTION:

Shape ☐ Normal ☐ Abnormal

Symmetry ☐ Normal ☐ Abnormal

Abdominal Distension : ☐ Present ☐ Absent

Prominent veins: ☐ Present ☐ Absent

Hernia : ☐ present ☐ Absent

Visible peristalsis : ☐ present ☐ Absent

b)**PALPATION:**

Tenderness Yes ☐ No ☐

If yes…….

Organomegaly

Liver ☐

Spleen ☐

Kidney ☐

Aorta ☐

Bladder ☐

c)PERCUSSION

Percussion of Abdomen : Normal ☐

Hyper resonance ☐

Dullness ☐

D) Auscultation:

Bowels sounds

Normal ☐ decreased ☐ increased ☐

Other systems:	Normal	Affected
Cardio vascular system:	☐	☐
Respiratorysystem	☐	☐
Musculo skeletal system:	☐	☐
Central nervous system:	☐	☐

Clinical assessment:	**YES**	**NO**
Peri anal itching	☐	☐
Pain around the umbilicus	☐	☐
Loss of appetite	☐	☐
Teeth grinding during sleep	☐	☐
Bed wetting	☐	☐
History of Passing worms in the stools	☐	☐

SIDDHA ASSESSMENT

Nilam:-

Kurinji ☐ Mullai ☐ Marutham ☐ Neithal ☐ Paalai ☐

Kaala Iyalbu:-

Kaarkalam	☐	Koothirkaalam	☐	Munpanikaalam	☐
Pinpanikaalam	☐	Ilavenirkaalam	☐	Muthuvenirkaalam	☐

Yaakai

Vatham	☐	VathaPitham	☐	VathaKabam	☐
Pitham	☐	Pithavatham	☐	PithaKabam	☐
Kabam	☐	KabaVatham	☐	KabaPitham	☐

Gunam

Sathuvam ☐ Rasatham ☐ Thamasam ☐

Pori / Pulangal

	Normal	Affected		Normal	Affected	Remarks
Mei	☐	☐	Unarvu	☐	☐	
Vaai	☐	☐	Suvai	☐	☐	
Kan	☐	☐	Parvai	☐	☐	
Mooku	☐	☐	Natram	☐	☐	
Sevi	☐	☐	Oli	☐	☐	

Kanmendhirium / Kanmavidayam

	Normal	Affected		Normal	Affected	Remarks
Kai	☐	☐	Dhanam	☐	☐	
Kaal	☐	☐	Ghamanam	☐	☐	
Vaai	☐	☐	Vaku	☐	☐	
Eruvai	☐	☐	Visarkam	☐	☐	
Karuvai	☐	☐	Anantham	☐	☐	

Uyir Thadhukkal

Vatham:	Normal	Affected	Remarks
Pranan	☐	☐	
Abanan	☐	☐	
Viyanan	☐	☐	
Uthanan	☐	☐	
Samanan	☐	☐	
Nagan	☐	☐	
Koorman	☐	☐	
Kirukaran	☐	☐	
Devathathan	☐	☐	
Dhananjeyan	☐	☐	
Pitham:-	Normal	Affected	Remarks
Analam	☐	☐	
Ranjagam	☐	☐	
Saathagam	☐	☐	
Alosagam	☐	☐	
Prasagam	☐	☐	
Kabam:-	Normal	Affected	Remarks
Avalambagam	☐	☐	
Kilethagam	☐	☐	
Pothagam	☐	☐	
Tharpagam	☐	☐	
Santhigam	☐	☐	

Udal thathukkal

	Normal	Affected	Remarks
Saaram	☐	☐	
Senneer	☐	☐	
Oon	☐	☐	
Kozhuppu	☐	☐	
Enbu	☐	☐	
Moolai	☐	☐	
Sukilam / Suronitham	☐	☐	

EnvagaiThervugal

Naa	Normal	Affected	Remarks
Niram	☐	☐	
Thanmai	☐	☐	
Suvai	☐	☐	
Niram	☐	☐	
Mozhi	☐	☐	
Vizhi			
Niram	☐	☐	
Thanmai	☐	☐	
Parvai	☐	☐	
Sparisam	☐	☐	
Malam			
Niram	☐	☐	
Nurai	☐	☐	
Elagal	☐ Yes	☐ No	
Erugal	☐ Yes	☐ No	

Moothiram

Neerkuri:-	Normal	Affected
Niram	☐	☐
Edai	☐	☐
Nurai	☐	☐
Manam	☐	☐
Enjal	☐	☐

Neikuri:	
Vatham	☐
Pitham	☐
Kabam	☐
Others	☐

Naadi:

ThaniNadi

Vadham ☐ Pitham ☐ Kabam ☐

ThonthaNadi

Vathapitham ☐ Pitha vatham ☐ Pitha kabam ☐ Kabapitham ☐

ThodaNadi

Vatha kabam ☐ Kaba vatham ☐

Mukkutra Nadi

Diagnosis:

Treatment:

DRUGS ISSUED:_____

Date : _____

Station : _____

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4.CLINICAL ASSESSMENT FORM

S.NO	CLINICAL SYMPTOMS	1^{s} day	7th day
1.	Presence of peri anal itching.		
2.	Pain around the umbilicus		
3.	Loss of appetite		
4.	Teeth grinding during sleep.		
5.	Bed wetting.		
6.	History of passing worms in the stools		

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5.LABORATORY INVESTIGATIONS

Special Investigation	**Before treatment Date:**	**After treatment Date:**
Scotch tape test		
Stools Investigation		
Ova		
Cyst		
Occult blood		

Signature of Investigator

Date:

Station:

FORM 6 – PATIENT INFORMATION SHEET

Name of Principal Investigator:……..……..

Name of the institute: National Institute of Siddha,
Tambaram Sanatorium,
Chennai-47.

INFORMATION SHEET FOR PATIENTS PARTICIPATING IN THE OPEN CLINICAL TRIAL.

I, _____Studying as PG Student in Dept. of Kuzhandhai maruthuvam at National Institute of Siddha, Tambaram Sanatorium is doing a trial on the study "KEERINOI"(*ENTEROBIUS VERMICULARIS*). Threadworm is a most common disease in children. In this regard, I am in a need to ask you few questions. I will maintain confidentiality of your comments and data obtained. There will be no risk of disclosing your identity and no physical, psychological or professional risk is involved by taking part in this study. Taking part in this study is voluntary. No compensation will be paid to you for taking part in this study.

You can choose not to take part. You can choose not to answer a specific question. There is no specific benefit for you if you take part in the study. However, taking part in the study may be of benefit to the community, as it may help us to understand the problem of defaulters and potential solutions.

If you agree your child to be a participant in this study, he/she will be included in the study primarily by signing the consent form and then you will be given the internal medicine ELISEVI KUDINEER 10ml with 1gm vaaividangam(8-10 years), 20ml with 2gm vaaividangam(10-12years) Bid.

The information I am collecting in this study will remain between you and the principal investigator (myself). I will ask you few questions through a questionnaire.

The questionnaire will take approximately 20 minutes of your time.

If you wish to find out more about this study before taking part, you can ask me all the questions. You may contact myself, Dr.L.ELAMATHI, PG Student cum principal investigator(7200801587) of this study National Institute of Siddha,Chennai-47. You can also contact the Member-secretary of Ethics committee, National Institute Siddha,Chennai 600047, Tel no : 91-44-22380789, for rights and participation in the study.

தகவல் படிவம்

கீரிநோய்க்கான சித்த மருந்துகளின் (எலிச்செவி குடிநீர்) பரிகரிப்பு திறனைக்கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்.

முதன்மை ஆராய்ச்சியாளர் பெயர் : லோ. இளமதி

நிறுவனத்தின்பெயர் : தேசிய சித்த மருத்துவ நிறுவனம்

தாம்பரம் சானட்டோரியம்- சென்னை-47

தேசிய சித்த மருத்துவ நிறுவனத்தில் பட்டமேற்படிப்பு பயின்று வரும் நான் கீரிநோயில் மருத்துவ ஆராய்ச்சியில் ஈடுபட்டுள்ளேன்.

கீரிநோய் என்று சித்த மருத்துவத்தில் சொல்லப்படும் நோயானது அடிக்கடி பால் போலச் சிக்கி கழிதல், உடம்பு இளைத்துக் கட்டுதல், மார்பிலும் விலாவிலும் கட்டிகொண்டு அறிவு மாறி பேசல் முதலிய குறிகுணங்கள் காணப்படும் தன்மையுடையது.

இந்த ஆராய்ச்சி சம்பந்தமாக சில கேள்விகள் கேட்கவும், தேவையான ஆய்வக பரிசோதனைக்கு தங்களது குழந்தையை உட்படுத்தவும் உள்ளேன்.

இது சம்பந்தமான தங்களது குழந்தையின் அனைத்து விவரங்களும் ரகசியமாக வைக்கப்படும் என உறுதி அளிக்கிறேன்.இதில் பயணப்படி முதலிய எந்த உதவி தொகையும் வழங்கப்பட மாட்டாது.இந்த ஆராய்ச்சியின் போது தங்களது குழந்தையின் உடலுக்கு வேறு பாதிப்பு ஏற்படும் பட்சத்தில் தேசிய சித்த மருத்துவமனையில் தக்க சிசிச்சை அளிக்கப்படும்.

இந்த ஆராய்ச்சிக்கு தங்கள் விருப்பத்தின் பேரில் குழந்தையை உட்படுத்தும் பட்சத்தில் உள்மருந்தாக **எலிச்செவிகுடிநீர்-10மி.லி** மற்றும் 1கி-வாய்விடங்கம் (8-10 வயதுக்கு), **எலிச்செவிகுடிநீர்-20மி.லி** மற்றும் 2கி-வாய்விடங்கம்(10-12வயதுக்கு), இருவேளை 3 நாட்கள் கொடுக்க வேண்டும்.

இந்த ஆராய்ச்சியில் நோயினராக சேர்ந்த பிறகு உங்களுக்கு விருப்பம் இல்லையெனில் எப்போது வேண்டுமானாலும் தங்களது குழந்தையை விலக்கிக் கொள்ளலாம்.

இந்த ஆராய்ச்சி சம்பந்தமான விபரங்கள் மற்றும் நோயின் தன்மை பற்றியும் அறிவதற்கும் முதன்மை ஆராய்ச்சியாளரான மரு.லோ.இளமதி (பட்ட மேற்படிப்பாளர்,குழந்தை மருத்துவ பிரிவு) கைபேசி எண்ணில்(7200801587) எப்போதும் தொடர்புகொள்ளலாம்.

மேலும் இந்த ஆராய்ச்சிக்கு IEC (நிறுவன நீதிநெறிகுழு) சான்று பெறப்பட்டுள்ளது.

இந்த மருந்து சிறப்பாக கீரிநோய்க்காக அங்கீகரிக்கப்பட்ட சித்த மருத்துவ நூலில் கூறப்பட்டுள்ளது.ஏற்கனவே உபயோகத்தில் உள்ளது. இதுவரை நோயாளிகளிடம் எந்த வித பக்க விளைவுகளை ஏற்படுத்தவில்லை.

NATIONAL INSTITUTE OF SIDDHA

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A CLINICAL EVALUATION OF "ELISEVI KUDINEER"FOR KEERINOI IN CHILDREN-

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1. S.I. No:	2. OP/ IP No:	3.Name:
4. Age:	5.Gender:	6.Date of Enrollment:
7. Date of completion:	8.Informant:	9.Reliablity:

FORM-7 WITHDRAWAL

Date of trial commencement	:
Date of withdrawal from trial	:
Reason(s) for withdrawal	: Yes/ No
Long absence at reporting	: Yes/ No
Irregular treatment	: Yes/ No
Shift of locality	: Yes/ No
Complication adverse reactions if any	: Yes/ No
Exacerbation of symptoms	: Yes/ No
Patient not willing to continue	: Yes/ No

Date: Signature of Principal Investigator

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FORM-8- ADVERSE REACTION

1. Sl.No:	2. OP/ IP No:	3.Name:
4. Age:	5.Gender:	6.Date of Enrollment:
7. Date of completion:	8.Informant:	9.Reliablity:

Name	:
Age	:
Gender	:
OPD/ IPD No	:
Registration No	:
Date of trial commencement	:
Date of withdrawal from trial	:
Description of adverse reaction	:

Date: Signature of Principal Investigator

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ASSENT FORM

I, _____understand that my parents (mom and dad)/guardian have/has given permission (said it's okay) for me to take part in a project about done by _ _____.

I am taking part because I want to. I have been told that I can stop at any time I want to and nothing will happen to me if I want to stop.

Signature

1. Patient / consumer identification (please complete or tick boxes below as appropriate)

NATIONAL PHARMACOVIGILANCE PROGRAMME FOR SIDDHA DRUGS

Reporting Form for Suspected Adverse Reactions to Siddha Drugs

Please note: i. **all** consumers / patients and reporters information will remain confidential.

ii. It is requested to report all suspected reactions to the concerned, even if it does not have complete data, as soon as possible.

Peripheral Center code: State:

Name	Father name	Patient / Record No.
Ethnicity	Occupation	
Address Village / Town Post / Via District / State		Date of Birth / Age:
		Sex: Male / Female Weight : Degam:

2. Description of the suspected Adverse Reactions (please complete boxes below)

Date and time of initial observation		Season:
Description of reaction		Geographical area:

3. List of all medicines / Formulations including drugs of other systems used by the patient during the reporting period:

Medicine	**Daily dose**	**Route of administration & Vehicle – Adjuvant**	**Date**		**Diagnosis for which medicine taken**
			Starting	**Stopped**	
Siddha					
Any other system of medicines					

4. Brief details of the Siddha Medicine which seems to be toxic :

Details	Drug – 1	Drug – 2	Drug – 3
a) Name of the medicine			
b) Manufacturing unit and batch No. and date			
c) Expiry date			
d) Purchased and obtained from			
e) Composition of the formulation / Part of the drug used			

b) Dietary Restrictions if any

c) Whether the drug is consumed under Institutionally qualified medical supervision or used as self medication.

d) Any other relevant information.

5. Treatment provided for adverse reaction:

6. The result ofthe adverse reaction / side effect / untoward effects (please complete the boxes below)

Recovered:	Not recovered:	Unknown:	Fatal:	If Fatal Date of death:

Severe: Yes / No.	Reaction abated after drug stopped or dose reduced:
	Reaction reappeared after re introduction:

Was the patient admitted to hospital? If yes, give name and address of hospital	

7. Any laboratory investigations done to evaluate other possibilities? If Yes specify:

8. Whether the patient is suffering with any chronic disorders?

Hepatic Renal Cardiac Diabetes Malnutrition

Any Others

9. H/O previous allergies / Drug reactions:

10. Other illness (please describe):

11. Identification of the reporter:

Type (please tick): Nurse / Doctor / Pharmacist / Health worker / Patient / Attendant / Manufacturer / Distributor / Supplier / Any others (please specify)
Name:
Address:
Telephone / E – mail if any :

Signature of the reporter: **Date:**

Please send the completed form to:

Name & address of the RRC-ASU/ PPC-ASU

The Director
National Institute of Siddha,
Centre For Siddha Medicine),
Tambaram Sanatorium, Chennai-600 047.
Fax : 044 – 22381314
Website :www.nischennai.org
Email: nischennaisiddha@yahoo.co.in

* *

This filled-in ADR report may be sent within one month of observation /occurrence of ADR

Who Can Report?

⇒ Any Health care professionals like Siddha Doctors / Nurses / Siddha Pharmacists / Patients etc.

What to Report?

⇒ All reactions, Drug interactions,

Confidentiality

⇒ The patient's identity will be held in strict confidence and protected to the fullest extent

Signature of the Lecturer: Signature of the HOD

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

#69, Anna salai, Guindy, Chennai-600 032.

This certificate is awarded to

Dr./~~Mr.~~/~~Ms.~~ L. ELAMATHI

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

"Research Methodology & Biostatistics"

for AYUSH Post Graduates & Researchers

Organised by the Department of Siddha

The Tamil Nadu Dr. M.G.R. Medical University from 23.06.2014 to 27.06.2014.

Dr. N. KABILAN M.D. (Siddha)
Reader, Dept. of Siddha

Dr. JHANSI CHARLES, M.D.
Registrar

Prof. Dr. D. SHANTHARAM, M.D., D.Diab.,
Vice-Chancellor

NATIONAL INSTITUTE OF SIDDHA
राष्ट्रीय सिद्ध संस्थान
Department of AYUSH- MINISTRY OF HEALTH & FAMILY WELFARE
आयुष विभाग - स्वास्थ्य एवं परिवार कल्याण मंत्रालय
GOVERNMENT OF INDIA-भारत सरकार
TAMBARAM SANATORIUM, CHENNAI -600 047 -ताम्बरम सनटोरियम चेन्नई -600 047
फोन/Tele : 044-22411611 फैक्स/Fax : 22381314
ईमेल: nischennaisiddha@yahoo.co.in वेब :www.nischennai.org

F.No.NIS/6-20/IEC/14-15 Dt: 25.09.14

CERTIFICATE

Address of Ethics Committee: National Institute of Siddha, Tambaram Sanatorium, Chennai-600047, Tamil Nadu, India	
Principal Investigator: Dr.L.Elamathi, P.G.Student, Kuzhandhai Maruthuvam	
Protocol title: A clinical evaluation of Elisevikudineer a Siddha drug in the treatment of Keerinoi (Threadworm – enterobius vermicularis) in children	
Documents filed	1) Protocol, 2) Data Collection forms 3) Patient Information Sheet 4) Consent form 5) SAE(Pharmacovigilance)
Clinical trial Protocol (others – Specify)	**Yes**
Informed consent documents	**Yes**
Any other documents	-
Date of IEC approval & its number	**NIS/IEC/8-14/23 - 26-08-2014**

We approve the trial to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information / informed consent.

Chairman **Member-Secretary**

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 600047

CERTIFICATE OF BOTANICAL AUTHENTICITY

Certified that the following plant drugs used in the Siddha formulation "**Elisevi Kudineer**" (Internal) for the treatment of **Keerimoi** (Threadworm-Enterobius vermicularis) taken up for Post Graduation Dissertation studies by **Dr.L.Elamathi**, M.D.(S), II year, Department of Kuzhandhai Maruthuvam, 2015, are identified and authenticated through Visual inspection, Experience, Education & Training, Organoleptic characters, Morphology, Micromorphology and Taxonomical methods as

Merremia emarginata Linn. (Convolvulaceae), Whole plant
Moringa oleifera Lam. (Moringaceae), Stem bark
Terminalia chebula Retz. (Combretaceae), Fruit
Terminalia bellirica (Gaertner) Roxb. (Combretaceae), Fruit
Phyllanthus emblica Linn. (Euphorbiaceae), Fruit
Embelia ribes Burm.f. (Myrsinaceae), Fruit

Certificate No: NISMB1882015

Date: 27-08-2015

27/8/15
Authorized Signatory

Dr. D. ARAVIND, M.D.(s),M.Sc.,
Assistant Professor
Department of Medicinal Botany
National Institute of Siddha
Chennai - 600 047, INDIA

சித்த மருத்துவ மைய ஆராய்ச்சி நிலையம், அரும்பாக்கம், சென்னை - 600106
सिद्ध केन्द्रीय अनुसंधान संस्थान, अरुम्बाक्कम, चेन्नै - 600106

Siddha Central Research Institute

(Central Council for Research in Siddha, Ministry of AYUSH, Govt. of India)
Arumbakkam, Chennai – 600106
[Ph: 044-26214925, 26214809, Fax: 26214809, Email: crisiddha@gmail.com, Web: www.siddhacouncil.com]

01.01.2015

Name of the student: Dr. L. Elamathi, II Year Kuzhandai Maruthuvam,
National Institute of Siddha, Chennai-47.

PHYSICO-CHEMICAL ANALYSIS OF ELISEVI KUDINEER

S.No	Parameter		Mean
1.	Loss on Drying at 105°C	:	8.69 %
2.	Total Ash	:	4.79 %
3.	Acid insoluble Ash	:	0.53 %
4.	Water Soluble Extractive	:	28.85 %
5.	Alcohol Soluble Extractive	:	20.45 %
6.	pH	:	3.12

(R. Shakila)
Research Officer (Chemistry)

for (Dr. P. Sathiyarajeswaran)
Assistant Director (Scientist 2) I/c

Clinical Trial Details (PDF Generation Date :- Fri, 17 Jun 2016 05:31:32 GMT)

CTRI Number	CTRI/2016/05/006934 [Registered on: 13/05/2016] - **Trial Registered Retrospectively**
Last Modified On	05/05/2016
Post Graduate Thesis	Yes
Type of Trial	Interventional
Type of Study	Siddha
Study Design	Single Arm Trial
Public Title of Study	A clinical study on helminthic disorder in children with siddha drug
Scientific Title of Study	A clinical evaluation of Elisevikudineer a siddha drug in the treatment of Keerinoi (Threadworm -enterobius vermicularis) in children

Secondary IDs if Any

Secondary ID	Identifier
NIL	NIL

Details of Principal Investigator or overall Trial Coordinator (multi-center study)

Details of Principal Investigator	
Name	Elamathi
Designation	PG scholar
Affiliation	National Institute of Siddha
Address	National Institute of Siddha Tambaram Sanatorium Chennai Chennai TAMIL NADU 600047 India
Phone	9943788580
Fax	
Email	drelamathi112@gmail.com

Details Contact Person (Scientific Query)

Details Contact Person (Scientific Query)	
Name	Elamathi
Designation	PG scholar
Affiliation	National Institute of Siddha
Address	National Institute of Siddha Tambaram Sanatorium Chennai Chennai TAMIL NADU 600047 India
Phone	9943788580
Fax	
Email	drelamathi112@gmail.com

Details Contact Person (Public Query)

Details Contact Person (Public Query)	
Name	Vennila
Designation	Lecturer
Affiliation	National Institute of Siddha
Address	National Institute of Siddha Tambaram Sanatorium Chennai Chennai TAMIL NADU 600047 India
Phone	9789093986
Fax	
Email	gvennils@gmail.com

Source of Monetary or Material Support

Source of Monetary or Material Support
> Self

Primary Sponsor

Primary Sponsor Details	
Name	Ayothidass pandithar hospital
Address	National Institute of Siddha Tambaram Sanatorium Chennai
Type of Sponsor	Research institution and hospital

Details of Secondary Sponsor

Name	Address
NIL	NIL

Countries of Recruitment

List of Countries
India

Sites of Study

Name of Principal Investigator	Name of Site	Site Address	Phone/Fax/Email
DrElamathi	National institute of siddhs	Ayothidass Pandithar hospital National Institute of Siddha Tambaram Sanatorium Chennai Chennai TAMIL NADU	7200801587 drelamathi112@gmail.com

Details of Ethics Committee

Name of Committee	Approval Status	Date of Approval	Is Independent Ethics Committee?
Institutional Ethics Committee	Approved	26/08/2014	Yes

Regulatory Clearance Status from DCGI

Status	Date
Not Applicable	No Date Specified

Health Condition / Problems Studied

Health Type	Condition
Patients	Perianal itching Loss of appetite

Intervention / Comparator Agent

Type	Name	Details
Comparator Agent	NA	NA
Intervention	Yelisevi Kudineer	80 ml, given orally once in a day for 3 days

Inclusion Criteria

Inclusion Criteria	
Age From	8.00 Year(s)
Age To	12.00 Year(s)
Gender	Both
Details	Perianal itching Loss of appetite

Exclusion Criteria

Exclusion Criteria	
Details	Enteric fever Amoebiasis

Method of Generating Random Sequence

Method of Concealment

Blinding/Masking

Primary Outcome

Outcome	Timepoints
Releiving of symptoms	3 days

Secondary Outcome

Outcome	Timepoints

	Efficacy of the drug | 14 days
Target Sample Size	**Total Sample Size=**40 **Sample Size from India=**40
Phase of Trial	Phase 2
Date of First Enrollment (India)	23/09/2015
Date of First Enrollment (Global)	No Date Specified
Estimated Duration of Trial	**Years=**1 **Months=**0 **Days=**0
Recruitment Status of Trial (Global)	Not Applicable
Recruitment Status of Trial (India)	Open to Recruitment
Publication Details	After the study
Brief Summary	Elisevi Kudineer containing Elisevi elai, Murungaipattai, Kadukaaithol, Thaanrikaaithol, Nellivatral, Vaaividangam is taken in equal amount and powdered. it will be made into decotion and given to children orally once in a day 20ml for three days

POONGA BIOTECH RESEARCH CENTRE

No.10/58, Kamala Nehru Nagar, 1st Street, Choolaimedu, Chennai - 600 094.
Ph : 044 - 23634289, Website : www.poongabiotech.com

Dr. B. Janarthanam
Chief Scientist

4.7.2016

To whomsoever it may concern

This is certify that Dr. L. Elamathi, National Institute of Siddha, Tambaram Sanatoruim, Chennai, Tamil Nadu 600047 has carried out the following work in our centre.

Anthelmintic Activity of Elisevi Kudineer

B. Janarthanam

Dr. B. Janarthanam