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A STUDY ON

KABASURAM

(DISSERTATION SUBJECT)

For the partial fulfillment of

Requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH IV – DEPARTMENT OF KUZHANDHAI MARUTHUVAM

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CERTIFICATE

Certified that I have gone through the dissertation submitted by **Dr. R. SUGUNA,** a student of final **M.D(S),** Branch-IV, Department of **Kuzhandhai Maruthuvam**, **National Institute of Siddha,** Tambaram Sanatorium, Chennai-47, and the dissertation work has been carried out by the individual only. This dissertation does not represent or reproduce the dissertation submitted and approved earlier.

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INTRODUCTION

Siddha system of medicine is the most ancient system of medicine and it was found by siddhars before thousands of years ago.

The term "*siddha*" thus means “knowledge of life” or “Perfection, Everlasting, Ever sure”. Siddha can be defined as a system, which uses the inherent principles of nature, to maintain the health of a person by keeping the individual's body, mind and spirit in perfect equilibrium with nature.

The goal of the siddha system is to prevent ailments, heal the sick and preserve life. The siddha system is a psychosomatic system of medicine that deals with the relationship between the mind and body and aims at maintaining the physical, mental and moral health of an individual. As per siddha system, man is regarded as the microcosm and universe the macrocosm.

Siddha is based on the premise that the universe is made up of five elements: air, fire, water, earth and ether. These elements are represented in humans by three "Thodams", or three Humors namely -Vadham, Pitham and Kapham. When any of the Thodams accumulate in the body beyond the desirable limit, the body loses its balance. Every individual has a distinct balance, and our health and well-being depend on getting a right balance and causes the illness.

Saint Thiruvalluvar has indicated the same view as

“Miginum kuraiyinum noi seyum noolor

Vali mudhala enniya moondru”.

The living man is a conglomeration of three Thodams, Udal Thathukkal and Panchabhutham. A suitable proportion of these five elements, in combination with one another are responsible for the different strictures and functions of the body matrix. This is known as the theory of Panchabhuta Pacnhikaranam.

Siddha suggests specific lifestyle and nutritional guidelines to help individuals reduce the excess thodam. In siddha, health is a state of balance between body, mind and consciousness. As per Siddha literature, human physiology and pathology are based on Three humors, Pancha Boodhas, 96 Thathuvams, and Seven udal thathukkal.

Balavagadam is one of the siddha literature which deals with the diseases of children. Infectious diseases and nutritional deficiencies are the twin problems among the health problems of children affecting their growth and development. In Peadiatrics, **"Kabasuram"** is one of the commonest infectious disease.

In our Siddha literature, Kabasuram is described as fever, rigor, Cough with or without expectoration, wheezing, arthralgia, headache and constipation. Most of the clinical features of Kabasuram are more or less similar to that of acute bronchitis.

Acute bronchitis is infectious disease of the respiratory tract. Acute bronchitis affects the children in their active period of life and it is prevalent throughout the world and is one of the top five reasons for childhood physician visits in countries that track such data.

Siddha system of medicine have been practicing in India from the origin of mankind and it is the crown all traditional systems of medicine in the world.

Siddha literature having more number of efficacious medicines for Kabasuram, even though there are more number of research findings have been published for the above ailment but not yet have scientifically validated drugs available for the Kabasuram. Hence we have chosen the authenticated sasthric siddha poly herbal formulation namely **Kabasura Kudineer** for the management of Kabasuram, which is mentioned in literature **Athma Ratchamirtham Enum Vaithiya Sara Sankirakam.**

AIM AND OBJECTIVES

AIM :

To evaluate the efficacy of “KABASURA KUDINEER” for the management of Kabasuram (Acute Bronchitis)

OBJECTIVES :

- To collect and review the ideas mentioned in the ancient Siddha literature about the disease.
- To explore definition, etiology, clinical features, diagnosis, investigations and treatment of Kabasuram as laid down from various siddha literature
- To study the disease Kabasuram on the basis of three thodam, envagaithervugal, neerkuri, neikuri, udal thathukkal, paruvakaalangal, age, sex and economic status.
- To make the correlative study of the siddha and modern aspect of this disease.
- To use the modern parameters in the investigation of the disease that enhances to observe the progress of the patient.
- To conduct a clinical trial to find out the efficacy of kabasura kudineer.
- To have a detailed analysis of the clinical efficacy of the drug through the pharmacological, biochemical analysis.

SIDDHA ASPECT

சுரம்

விண்ணிற் றேவர்க் கெல்லாம்
விளங்குமால் முதல்வன் போல
மண்ணினார் நோய்க்கு முன்னாய்
வருஞ்சுர முதலே யென்னும்
பண்ணிய நிதானந் தன்னைப்
பாடவே பவள மேனிக்
கண்ணுதற் கடவுள் பெற்ற
கணபதி காப்புத் தானே.

பொருள்:

தேவர்களின் தலைவர் திருமாலே போன்று, நோய்களுக்குக் கெல்லாம் சுர நோயே முதலாவதாம்.

- தேரையர் வாகடம்

நோய் இயல்G (Definition) :

“சொல்லவே சுரத்தினுட திறமைகேளாய்
சடத்திலுள்ள பிணிக்கெல்லா மிராசாவாகும்
எல்லவெ நமனுக்கு மொக்கு மொக்கு
மெழிலோடு பிரலாப கோபமாகும்”
“தள்ளவே தக்கனிட வேள்வினைத்தான்
சாம்பசிவன் கோபத்தா லழித்தபோது
நெல்லவே நெற்றிக்கண் சுவாலைத்தன்னில்
நேராகப்புறப்பட்டு நேர்ந்ததாமே”

- யூகிவைத்திய சிந்தாமணி

நாக்கு, முகம், ஆகியன வெளித்துக் காணப்படும். மார்பு நோகும், இருமல், இளைப்பு ஆகியன தோன்றும். மூச்சு விட சிரமம், விக்கல் தாகம் ஆகியன தோன்றும் தொண்டை நோகும். மேல் மூச்சு வாங்கும். தினவெடுக்கும், தியங்கும்.

NtWngah; (synonyms):

" வெம்மை வெப்பு வெறுக்குங் காய்ச்சல்
தும்மாக் காங்கை சூடு தழலனல்
சும்மைப் பிறப்பில் இறப்பில்தொ டர்நோய்
பம்மல்நோய் காந்தல் பலபெயர் சுரமே"

-சித்தமருத்துவம் (பொது)

வெம்மை, வெப்பு, வெறுக்குங் காய்ச்சல், தும்மாக் காங்கை, சூடு, தழலனல், சும்மை, பிறப்பிலும் இறப்பிலும் தொடரும் நோய், பம்மல் நோய், காந்தல் என சுரத்திற்கு பல பெயர்கள் உண்டு.

நோய் வரும்வழி (Etiology):

According to siddhar Theraiyar:

According to siddhar theraiyar, first kabam will be increased in the stomach and then due to its action body temperature will be increased and it results in fever.

"குடல்தன்னில் சீதமலாது சுரமும் வாராது"

- தேரையர்

According to pothu Maruthuvam:

- மந்தம்
- மலக்கட்டு
- முக்குற்றங்களை மிகுதிப்படுதக் கூடிய உணவுகளை உண்ணல்
- மிகுந்த குளிர்ச்சி
- மிகு பனி
- மிகுந்தக் காற்று
- விடக் காற்று
- அதிகமாக நீராடல்
- விடம் கலந்த உணவு
- கடும் வெயிலில் திரிதல்
- மழையில் நனைதல்
- தேகத்தில் விட புழுக்கள் சென்று துளைத்தல்

ஆகிய இத்தியாதி அக மற்றும் புறக் காரணங்களால் வளி, அழல், ஐயம் எனும் முக்குற்றங்களும் கேடடைந்து, மிகுந்து பல உறுப்புகளுக்கு நோயை விளைவிக்கக் கூடியதான சுரத்தை உண்டாக்கும்.

According to Roga Nirnaya Saram:

- அதி நடை
- அறு சுவை வஸ்து பேதம்

இவைகளால் வாத, பித்த சிலேத்துமங்கள் அதிகரித்து சீதக்கட்டு ஸ்தனத்தைப் பற்றி ஜீரணிக்காத அன்னரசத்தைப் அனுசரித்து, நரம்பு ரோமத் துவாரங்களை அடைத்து நாபி ஸ்தானத்தில் சேர்ந்து ஜடராக்கினியை மேலில் எழும்பி அதனுடன் கலந்து சர்வாங்கம் வியாப்பித்தலால் சுரம் பிறக்கிறது.

முற்குறிகுணங்கள் (Premonitory Symptoms):

Before the onset of fever, some of the premonitory symptoms will be seen,

- பசியின்மை
- உடல் வலி
- நாவறட்சி
- உணவு வெறுப்பு
- நளிர்
- வாய் கைத்தல்
- பிதற்றல்
- கூசுதல்
- கிறுகிறுப்பு
- மயக்கம்
- தேகங்குத்தல்
- இரவில் தூக்கமின்மை
- நா சுவையறியாமை
- உணவு செரியாமை

- சித்தமருத்துவம் (பொது)

According to Roga Nirnaya Saram:

- சுரம், தேக வலி,
- மலக்கட்டு,
- பசியின்மை
- தாகம்
- கண் எரிவு
- தலை பாரம்

Classification of Fever :

According to various siddha literatures :

	Book Name	Types of Fever
1.	Balavagadam – Dr.Pon.Kurusironmani	20
2.	Pillaippini; Maruthuvam – Dr.A.Sundarrasan	32
3.	Siddha Maruthuvam Podhu –Dr.K.Na.Kuppusamy Mudhaliyar	64
4.	Seevaratchamirtham – Arumuga Pillai	312
5.	T.v Sambasiva Pillai Agarathy	64
6.	Yugi Vaithya Sinthamani	7
7.	Theraiyar Vagadam	40
8.	Agathiyar Vaithya Rathina Surukkam	85(64)
9.	The hand book of Indian Medicine by T.G. Ramamoorthi iyer	85

கப சுரம்

வேறுபெயர்:

சிலேத்தும சுரம், சீத சுரம், ஐய சுரம்

ஐயத்தின் இயற்கை நிலைகள், அதன் மிகுகுணம் போன்றவற்றை ஒப்பு நோக்கும் பொருட்டு கீழ்கண்டவாறு தொகுக்கப்படுகின்றது.

(ஐயம் - உயிர் தாது)

தன்மை :

- தண்மை, நெய்ப்பு
- மந்தம், வழுவழுப்பு
- மென்மை, திண்மை

வாழுமிடம் :

- சமானவாயு, சுழுமுனை
- ஆக்கினை, விந்து
- நாக்கு, உண்ணாக்கு
- கொழுப்பு, மச்சை, குருதி, மார்பு
- நரம்பு, எலும்பு மூளை, பெருங்குடல்,

இயற்கைப் பண்பு :

- நிலைத்தல்
- நெய்ப்பு
- கீல்களின் அமைப்பின் கட்டுகள்
- பொறையுடைமை (பசி, நீர்வேட்கை, துயரம், கலக்கம், வெப்பம் போன்றவற்றை பொறுத்துக் கொள்ளுதல்)

ஐய மிகுகுணம் :

- அக்கினி மந்தப்படல்
- வாய்நீர் ஊறல்
- ஊக்கம் குறைதல்

- உடல் கனமாக தோன்றுவதுடன் வெண்ணிறத்தையும், குளிர்ச்சியையும் அடைதல்.
- உடல் முற்றும் உள்ள கட்டுகள் தளரல்
- இரைப்பு, உப்பிசம், இருமல், மிகுதூக்கம் உண்டாதல்.

Kabasuram in Various Siddha Literatures:

According to Balavagadam:

ஐய சுரம்:

"மாங்கிசந் தன்னில் வாத மதுபித்தம் தானுந்தோலில்
துாங்கிடு **மெலும்பிலையஞ்** சுகமறத் தோன்றிப் பின்னர்
சாங்கிய மாக நின்று சரீரத்தில் நோயும் பண்ணும்
ஆங்கிதைச் சொல்ல வொண்ணா ததீதமாம் ரோகந்தானே"

குழந்தைகளுக்கு உண்டாகும் சுரம் ஐயமாகில் எலும்பில் சார்ந்து உடலை வெதுப்பி வருத்தும்

According to Pillaippini Maruthuvam:

ஐய சுரம்:

"சொன்னா சிலேற்ப சுரமது தான்
தோன்றும் குளிரும் பின்சுரமாய்
மன்னா ரிருமு காச்சலுமாய்
மலமும் பிடித்து வயிறூதும்
குன்னார் விட்டு விட்டேனே
குளிர்ந்து கால்கை அதைத்து வரும்
இன்னா ரிந்தக்குணம் கண்டால்
இதுபோம் நாளும் பதினேழே"

In Kabasuram, before the onset of fever, rigor starts first and then followed by fever, cough, abdominal distension due to constipation, pain present in upper and lower limb and also tiredness, sweetness in mouth, pallor of urine and motion, increase of sleep, vomiting, salivation and fever gradually reduced within seventeen days.

According To Theriyar Vakadam:

விக்க லெடுக்கல் மெய்யோங்கல்
மேனி வெதும்பல் மெய்தினவு
கக்குங் குருவோ வுண்டென்னக்
காலே வீங்கும் முகம் வெளுத்தல்
மிக்க அக்கினி மந்திக்கும்
மிகவே யுறக்கந் தான்வருதல்
தக்க இருமல் வாய்நீராஞ்
சாற்றி னோமிவ் விலக்கணமே.

விக்கல் தோன்றல், உடல் பருத்தல், உடலில் வெப்பம் காணல், தினவுண்டாதல், கால் வீங்குதல், முகம் வெளுத்தல், செரிப்புத் தன்மை குன்றுதல், மிக்க உறக்கங்காணல், இருமலும், வாய் நீர் ஊறலும் தோன்றுதல்

According to Theriyar Vakadam:

“பருகவே சுரந்தானும் பலகா லுண்டாம்
பாரமா யுடம்பெங்கும் வலியுண்டாகும்
அருகவே யடிகடிக்கு வியர்வையாகும்
அன்னந்தான் கொண்டுடனே வாந்தி யுண்டாம்
உருகவே வயிறெல்லா முளைச்சலாகும்
உப்பிசமு மேல்மூச்சு மிருமலுண்டாம்
கருகவே நாவரண்டு நீர்தாகிக்கும்
கனமான சுரசிலேட்பங் காணச் சொல்லே”

Remittant fever, body pain, vomiting, perspiration, abdominal pain, abdominal distention, cough, wheezing, dryness of tongue, thirst are the symptoms in Kabasuram.

According To Akaththiyar Aayul Vedham :

“தலைனத்துடல் வெதும்பிதன் செவிமூக்கடைக்கு
மிலகியவுதர முற்றிவிரைந்து மெய்சுளுக்குக் குத்து
விலகியே யசனஞ்செல்லா வெதும்பியே சிலேர்ப்பனத்தில்

நிலவியசுரங்கள் கண்டு நிச்சயமறிந்து செய்யே.”

தலைகனத்துடன் உடலும் வெதும்பி செவி மூக்கு ஆகியவை அடைத்துக் கொள்ளும், வயிறு முற்றி விரைத்து விடும், உடம்பில் சுளுக்கெடுத்துக் குத்துண்டாகும், உணவில் விருப்பம் இருக்காது.

According to Pararasasekaram Balaroga nidhanam:

“சென்னிமிகக் கனத்திடித்துச் சீறிமுக முங்கனத்து
மின்னுமனல் போற்சுரமு மென்மேலு மேமுடுகி
மன்னுசிரத் தூடதிக வலியிடிப்பு மேயாகும்
அன்னநடை மினனேயி தறிவைசேற் பனசுரமே”

Heaviness of head, anger, puffiness of face, high grade fever, severe headache are the symptoms of Kabasuram in pararasasekaram baloroga nidhanam textbook.

According To Roga Nernaya Saram:

கண், முகம், மூத்திரம், மலம் வெளுப்பு காணும். இருமல், கோழை, நெஞ்சில் வலி காணும்.

According to T.V.Sambasivapillai Agarathy:

கபாதிக்கத்தினால் உண்டான சுரத்தில், கை, கால் கனத்தல், சிரசில் நீர் கொண்டு வலி, உடம்பு இளைத்தல், விட்டு விட்டு சுரம் அடித்தல், நெஞ்சுவலி, நடுக்கம், தலையில் வியர்வை, அரோசிகம், அதிக தூக்கம், வயிற்றில் எரிச்சல், வாயில் இனிப்பு, இருமலுடன் கோழை, வாந்தி, சோர்வு ஆகிய குறிகுணங்கள் காணப்படும்.

குற்ற முதலிய வேறுபாடுகள் (Three humours derangement):

Due to changes in taste of food and activity, any one or any two or all the three thodam vatha, pitha, kabam will be derranged from their normal equilibrium. The derranged thodam will affect the stomach and gets deposited in the inner layer of the stomach. The deposition will be according to the derrangement of thodam. This deposition will affects the digestion of food and also affects the absorption of the digested food substance. This deposition will also affects the transport of absorbed nutrients to the tissues. After that it enters the intestines and affects the normally

functioning *udalthee* and this thee will be spread all over the body and it results in fever.

"வகுத்த முறைப்பாடு ம்ந்தத்தால் வாயுவாம்
மிகுந்தனல் வாயுவால் விலைந்திடும் நோயேயாம்
பகுத்திவை இரண்டால் பார் அச் சுரமுறும்
முகத்திவை மூன்றல் முத்தோஷங் கானுமே."

உடலில் மந்தம் ஏற்பட்டால் வாயு உண்டாகும், வாயுவும் மந்தமும் கூடுவதால் சுரமும், சுரம் வாயு மந்தம் மூன்று கூடுவதால் உடலில் வாத, பித்த, கப தோஷங்கள் விகற்கப்பட்டு நோய்கள் ஏற்படுகின்றன.

- பதினென் சித்தர் நாடி நூல்

நாடி நடை :

வாதகப நாடி, ஐய நாடி, கபபித்த நாடி

According to sadhaga naadi, in Kabasuram vathakaba naadi or kaba naadi or kabapitha naadi will be seen.

ஐயசுரத்தினை தொடரும் நோய் : (Complications)

மீளாத ஐயசுரம்

"ஐயசுரத்தின் குணங்கேளா யகடு பொருமிக் கண்வெளுக்கும்
கையும் காலுஞ் சோர்ந்துவிழும் கண்க ளுள்ளே தான்வீழும்
தொய்யல் சுரமும் விடாததுவும் சொல்லுந் தோட மானாற்போல்
மெய்யு நாக்கு மேவரண்டு விக்க லெடுக்கு மீளாதே
மெய்யில் வந்த வையசுரம் விட்டு விட்டே தான்வெதும்பிக்
கையுங் காலு மேவெதும்பிக் கன்னங் காயு நெஞ்சிடிக்கும்
உய்யு முழலை வாந்தியுண்டா மோடி யோடிக் கட்டும.்.
தையம் பிழைப்ப தரிதுண்டா யதிக மாகுஞ் சுரந்தானே "

- பாலவாகடம்

Pallor of eye, weakness of extremities, shurnken eyes, continuous fever, dryness of tongue and body, hiccough, intermittent fever, increased temperature in face and extremities, chest pain, vomiting, high grade fever are the symptoms when associated with Kabasuram, the patient cannot be recovered.

தீரா ஐய சுரம் இயல்பு :

"தொலைக்குஞ் சேத்துமக் குணங்கேளிர்
தொண்டை தன்னைப் புகைந்திருமும்
மலத்தை வெளுக்கும் வாடாமல்
வருந்தி யங்க மிகவெதுப்பும்
தலத்துக் கிடையுங் கொள்ளாது
தலையைத் தெரிக்கும் தண்ணீராம்
பிலத்தை மிகவே போக்கி வைக்கும்
பேசீர் சிலேத்தும சுரமென்றே.
தொண்டையில் புகைச்சலுடன் இருமல்,
மலத்தை வெளுத்தல் செய்யும்".

அங்கமெல்லாம் வெப்பமடைதல், தலையில் வெட்டுவது போன்ற வலி கானல், உடல் அடிக்கடி வியர்த்தல், படுக்கையில் பொருந்தாமை, இரண்டு கால்கள், கைகள், கண்கள், நா இவை வெளுத்திடும். பாலை விரும்பி மிக்க தொந்தரவுகள் செய்யும்.

நோய் கணிப்பு : **(Diagnosis)**

Piniyari muraimai is a method of diagnosing a disease. Siddha system has a very unique method of diagnosis.

“Pini” means	=	Disease
“Ari” means	=	Identify
“Muraimai” means	=	Method.

சித்த மருத்துவத்தின் நோய்கணிப்பில் பின்வரும் காரணிகள் முக்கிய பங்கு வகிக்கின்றன.

நோயாளியைச் சார்ந்தது :

1. உயிர் தாதுக்கள் (முக்குற்றம்)
2. உடல் தாதுக்கள் (ஏழு உடற்கட்டுகள்)
3. எண்வகைத் தேர்வு

நோயாளியைச் சாராதது :

4. அளவை

5. பொழுது

சிறுபொழுது - வைகறை, விடியல், எற்பாடு, நண்பகல், மாலை, யாமம்

பெரும்பொழுது - கார், கூதிர், முன்பனி, பின்பனி, இளவேனில், முதுவேனில்

6. ஐவகை நிலங்கள்

குறிஞ்சி, முல்லை, மருதம், நெய்தல், பாலை.

மேற்கூறிய காரணிகளின் மாறுபாடுகளை ஒன்றுடன் ஒன்று ஒப்பிட்டு நோய் கணிக்கப்படுகிறது.

1. உயிர் தாதுக்கள் (முக்குற்றம்)

Siddha is based on the premise that the universe is made up of five elements: air, fire, water, earth and ether. These elements are represented in humans by three "Thodamos", or energies: Vatam, Pittam and Kapham. When any of the Thodams accumulate in the body beyond the desirable limit, the body loses its balance.

a. Vadham: Vadham is a kinetic energy, which influences all movements

வகைகள் (**Types of Vatham**)	பணிகள்
1. பிராணன் (**Pranan**)	• மூச்சு வாங்கல், விடுதல் செய்யும். • புசிக்கும் உணவுகளைச் செரிக்கப் பண்ணும்.
2. அபானன் (**Abanan**) (கீழ்நோக்குகால்)	• மலசலத்தைத் தள்ளும். • ஆசனவாயைச் சுருக்கும். • அன்னசாரத்தைச் சேர வேண்டிய இடங்களில் சேர்ப்பிக்கும்.
3. வியானன் (**Viyanan**) (பரவுக்கால்)	• உறுப்புகளை நீட்ட மடக்கச் செய்தல் • பரிசங்களையறிதல். • உண்ணும் உணவின் சாரத்தை அவ்வவ்விடங்களில் நிரப்பித்து உடலைக்காக்கும்.
4. உதானன் (**Uthanan**) (மேல் நோக்குக்கால்)	• உணவின் சாரத்தை அங்கங்கே நிறுத்தும். வெளிப்படுத்தியும், கலக்கியும் வருதல் செய்யும்.

5. சமானன் (**Samanan**) (நடுக்கால்)	• வாயுக்களை மிஞ்சவொட்டாமல் மடக்கிச் சரிபடுத்தி சேர பண்ணும். • தண்ணீர், அன்னம் ஆகியவற்றை சமப்படுத்தி உடலிலெல்லாம் சேரும்படி செய்யும்.
6. நாகன் (**Nagan**)	• அறிவை எழுப்பல். • நல்ல பண்களைப் பாடுவிக்கும். • கண்களை திறக்க இமைக்கச் செய்யும். • மயிர்களை சிலிர்க்கப் பண்ணும்.
7. கூர்மன் (**Koorman**)	• இமையை கொட்டுவித்தல். • கொட்டாவி விடப்பண்ணல். • பலம் உண்டு பண்ணல். • கண்களை திறக்க, மூட பண்ணல். • உலகப் பொருட்கள் யாவற்றையும் கண்களுக்கு காண்பிக்கும். • கண்களினின்று நீரை விழப் பண்ணும்.
8. கிருகரன் (**Kirukaran**)	• நாவிற்கசிவு, நாசியிற் கசிவையும் உண்டாக்கல். • பசியை உண்டு பண்ணல். • ஒன்றை நினைத்திருக்கச் செய்தல் • போதற் தொழிலைச் செய்யும். • தும்மலையும், இருமலையும் உண்டாக்கல்.
9. தேவதத்தன் (**Thevathathan**)	• சண்டைகொள்ளல் • தர்க்கம்பேசல், மிக்க கோபம்.
10. தனஞ்செயன் (**Dhananjeyan**)	• மூக்கிலிருந்த தடித்து உடம்பு முழுமையும் வீங்கப் பண்ணும். • காதில் கடல் போலிரையும். • காற்றெல்லாம் வெளிப்பட்ட பின்னர் 3வது நாளில் தலை வெடித்த பின் தான் போகும்.

In patients with Kabasuram following vadham are commonly affected.

Pranan : Cough expectoration, Breathlessness

Abanan : Constipation

Uthanan : Vomiting, cough

Samnan : Poor appetite

Kirukaran : Running nose, cough

b. Pitham: It helps for all the transformation.

வகைகள் (**Types**)	பணிகள்
1. அனற்பித்தம் (Anala Pitham)	• உண்ட உணவை செரிக்கும்படி செய்யும்.
2. இரஞ்சகபித்தம் (Ranjaga Pitham)	• செந்நீரை மிகுதிபடுத்தும். • உணவின் சாற்றுக்கு செந்நிறத்தைக் கொடுக்கும்.
3. சாதகப்பித்தம் (Sathaga Pitham)	• நிறைவேற்றும் பண்புடையது. • மனம், புத்தி, பற்று இவற்றைக் கொண்டு விருப்பமான தொழிலைச் செய்து முடிக்கும்.
4. ஆலோசகப் பித்தம் (Alosaga Pitham)	• கண்களுக்கு பொருட்களைத் தெரிவிக்கும் பண்புடையது.
5. பிராசக பித்தம் (Pirasaga Pitham)	• தோலுக்கு ஒளியைக் கொடுத்து ஒளிரச் செய்யும்.

In patients with Kabasuram, the following Pitham commonly affected.

Analagam : Loss of appetite

Ranjagm : Paleness of the conjunctiva and tongue.

Santhigam : Difficulty to do the routine works properly.

c. Kabam: Stabilizes, maintains and lubricates all movements.

வகைகள் (**Types**)	பணிகள்
1. அவலம்பகம் (Avalambagam)	• நான்கு ஐயங்கட்கு பற்றுக் கோடாயிருத்தல்.
2. கிலேதம் (Kiletham)	• உணவுப் பொருள், நீர் இவைகளை ஈரப்படுத்தி மெத்தெனச் செய்யும் தொழிலைப் புரியும்.
3. போதகம் (Pothagam)	• நாவினின்று உண்ணுகிற சுவைகளை அறிவிக்கும் தொழிலைப் புரியும்.
4. தற்பகம் (Tharpagam)	• தலையினின்று கண்களுக்கு குளிர்ச்சியைத் தரும்.

5. சந்திகம் (Santhigam)	• பூட்டுகளில் நின்று இயற்கையாய் எல்லா கீல்களையும் ஒன்றோடொன்று பொருத்தி தளரச் செய்து கொண்டிருக்கும்.

In patients with Kabasuram, the following Kabam commonly affected.

Avalambagam : Cough with expectoration

Kilethagam : Poor appetite

Santhigam : Arthralgia.

2. உடற்தாதுக்கள; (Udal kattugal) :

உடற்தாதுக்கள்	பணிகள்
1. **சாரம்** (Saram)	• உடலையும், மனதையும் ஊக்கமுறச் செய்வது.
2. **செந்நீர்** (Senneer))	• அறிவு, வன்மை, ஒளி, ஒலி, செருக்கு இவைகளை நிலைக்கச் செய்வது.
3. **ஊன்** (Oon)	• உடலின் உருவத்தை அதன் தொழிற்கிணங்க அமைத்தலும், என்பை வளர்த்தலுமாம்.
4. **கொழுப்பு** (Kozhuppu)	• ஒவ்வோர் உறுப்பும் தத்தம் செயலை இயற்றும் போது கடினமின்றி இயங்க அவற்றிற்கு நெய்ப்பு பசை ஊட்டி உதவிபுரிவது.
5. **எலும்பு** (Enbu)	• உடலை ஒழுங்கு பட நிறுத்தி வைத்தல். • மேன்மையான உறுப்புகளைப் பாதுகாத்தல். • உடல் அசைவிற்கு அடிப்படையாயிருத்தல்.
6. **மூளை** (Moolai)	• என்புக்குள் நிறைந்து அவைகளுக்கு வன்மையும் மென்மையும் தருவது.
7. **வெண்ணீர்** (Venneer)	• தன்னையொத்த உருவப் பெருக்கிற்கு இடமாகிய கருத்தோற்றத்திற்கு முதலாய் நிற்பது.

Among these Udal Thathukkal, Saram get affected in patients with Kabasuram. In some patients Senneer is also affected.

3. எண்வகைத் தேர்வுகள் (Eight Diagnostic Stools) :

Siddhars have developed a unique method of diagnosing the disesase by “Enn vagai thervugal.”

“நாடி ஸ்பரிசம் நா நிறம் மொழி விழி
மலம் மூத்திரமிவை மருத்துவராயுதம்”

- நோய்நாடல் முதல் பாகம்

“தேடிய வியாதிக் கெல்லம் தேகத்தில் பரிட்சையுண்டு
கூடியே நிற்குமெட்டு பரிட்சையாங் கூறக்கேளீர்
நாடியே தொட்டாற் தேகம் மூத்திரம் வார்த்தை கண்கள் நாக்கு
பாடியே மலசலங்கள் பல வண்ணம் பார்த்துக் கொள்ளே”

- சித்த மருத்துவமணிகள;

Hence the diagnosis is made by the following,

1. Naadi (Pulse)
2. Sparisam (sensation to touch)
3. Naa (Tongue)
4. Niram (Colour)
5. Mozhi (Voice)
6. Vizhi (Eyes)
7. Malam (Faeces)
8. Moothiram (Urine)

Kabasuram in relatiion with Ennvagai Thervugal :

நாடி (ரிடளந)

எண்வகைத் தேர்வுகளில் பிரதானமானது. பிணியினை நாடியாலறிந்து மருந்தூட்டுதலே சிறந்தது என்று சித்த மருத்துவம் கூறுகின்றது. ஆனால் குழந்தைகளில் நாடிநடை சரியாக தோன்றாது என்பதை கீழ்கண்ட பாடலால் அறியலாம்.

“கொண்டிடவே கயரோகி காசரோகி
குறிப்பாக சிற்றின்பம் செய்த பேர்கள்
அண்டிடவே தரித்திரர்கள் விருத்தர் பாலர்
கொண்டிடவே இவர்களின் உறுப்பின் தாது
கூறவே முடியாது எவர்க்குக் கிட்டும்.”

- நோய்நாடல் நோய் முதல்நாடல் திரட்டு

எனினும் கீழ்கண்ட நாடிநடையானது தேர்வாளரால் பரிசோதித்து எழுதப்பட்டது.

In Kabasuram, the following types of Naadi can be seen commonly. They are

வாதகபம், கபபித்தம் , கபம்

Sparism:

Sparisam is a mehod of palpation and percussion to know the condition of the body like warm, Fever, Chillness, Sweating, Swelling, Parathesia, Dryness of the body, Numbness, Patches and Ulcers.

In Kabasuram, all patients have Veppam.

Naa :

This is the method o f inspection of the tongue, to find out the colour changes excessive salivation, redness, ulceration, pallor, any malignant growth, speech and movement of tongue.

In Kabasuram, some patient s has coated and pale tongue.

Niram:

Colour indicating the vatha, pittha, kaba mukkutram, yellow, pallor, redness of the skin are noted.

No abnormalities found in Kabasuram.

Mozhi:

Clarity o f voice, sound voice, slurring, are noted

No abnormalities found in Kabasuram.

Vizhi:

Abnormal colour changes indicating by three doshas. Pallor, excessive lacrimination, sub conjunctival bleeding, any specific disease of the eyes are noted.

In Some patients, the pallor of conjunctiva was noted.

Malam:

Quantity, color, odour, froth, frequency, constipation are noted.

In Kabasuram, there was constipation noted.

Moothiram:

Quantity, colour, deposits, froth, retention, odour, and abnormal constituents such as sugar, protein etc are noted.

Collection of urine for the determination of Neerkuri and Neikuri is a special diagnostic method.

நீர்க்குறி :

"வந்த நீர் கரியெடை மணம் நுரை எஞ்சலென்
றைந்தியலுளவை யறைகுது முறையே"

- நோய் நாடல் முதல் பாகம்

நீரில் நிறம், மணம், நுரை, எடை, எஞ்சல், ஆகியவற்றை நோக்க வேண்டும்.

'சுரப்பிணி அரிசனத்தோயங் காட்டுமே"

- நோய் நாடல் முதல் பாகம்

என்பதால் சுர நோயில் மஞ்சள்நிறம் பொருந்திய நீர் வெளிப்படும் என்பர்.

நெய்க்குறி :

குழந்தைகளின் நாடிநடை சரியாக கணிப்பதில் சிரமம் உள்ளதால், நெய்க்குறி பரிசோதனை மூலம் நோயாளர் எக்குற்றத்தால் பாதிக்கப்பட்டுள்ளார் என்பதனை கணிக்கலாம்.

The collected specimen is kept open in a glass dish. It is to be examined under direct sunlight, without any shaking of the vessel. Then add on drop of gingely oil by at distance of ½ or ¾ inch height, observe keenly the direction in which it spreads within few minutes, and conclude the diagnosis as follows,

"அரவென நீண்டின் வாதம்
ஆழிபோற் பரவின் பித்தம்
முத்தொத்து நிற்கின் மொழிவதென் கபமே"

- நோய் நாடல் முதல் பாகம்

சிலரில் ஆழி போல் (மோதிரம்) பரவியும், சிலரில் முத்துபோல் நின்றும் காணப்பட்டது.

அசாத்திய நீர் நிறம்:

சுரமேனும் மேகத்துனி யேனும் இருக்கில்
பெருகிய மூத்திரம் பிரிக்கும் உயிரையே

- நோய் நாடல் நோய்முதல் நாடல் திரட்டு

என்பதால் சுர அல்லது மேக நோய் கொண்டிருக்கும் போது அதிகரித்த நீர் உயிரைப் போக்குமென அறியலாம்.

4. Logics: (அளவை)

Alavaigal are used in clinical diagnose of a disease.

'அளவை காண்டல் கருதல் உரை
அபாவம் பொருள் ஒப்பறென்பார்
அளவை மேலும் ஒழிபுண்மை
யைதிகத் தோடியல் பென நான்
களவை காண்பர் அவையிற்றின்
மேலும் அறைவர் அவையெல்லாம்
அளவை காண்பர் கருதல்வரை
என்றிம் மூன்றிலடங்கிடுமே".

(சிவ சித் அளவை எண். 6)

காண்டல்	: Observation
கருதல்	: Inference
உரை	: Authority, literature
அபாவம்	: Perception
அருத்தாப்பத்தி	: Presumption
உபமானம்	: Comparison

ஒழிபு	:	Inference by elimination
உண்மை	:	Probability
ஐதீகம்	:	Tradition
இயல்பு	:	Natural inference

Alavai is divided into ten types, they are,

The above mentioned ten alavaigal are included in three alavaigal. They are

1. kaandal (Inspection By Siddha Method)

Through laandal the physicial cal directly see the patient, thera the patientls all the complaints and at length concludes a diagnosis.

2. Karuthal (Through Siddha Investigation)

Through Envagai thervu and neerkuri as well as neikuri. We can diagnose a disease by kauthal.

3. Urai literature (Evidene of siddha)

Comparative study of the signs and symptoms of the patient with the reference bookds and come to a diagnosis.

5. (Seasons) பருவக்காலங்கள்:

The whole year is constituted by 6 seasons. They are known as

கார்காலம்	-	ஆவணி, புரட்டாசி
கூதிர்காலம்	-	ஐப்பசி, கார்த்திகை
முன்பனிகாலம்	-	மார்கழி, தை
பின்பனிகாலம்	-	மாசி, பங்குனி
இளவேனில் காலம்	-	சித்திரை, வைகாசி
முதுவேனில் காலம்	-	ஆனி, ஆடி

In every season changes will occur in the land, water, plants, animals and human beings, which will modify the physiology and make them susceptible to certain specific diseases which are common in that season

	தன்னிலை வளர்ச்சி	வேற்றுநிலை வளர்ச்சி	தன்னிலையடைதல்
வாதம்	முதுவேனில் காலம்	கார்காலம்	கூதிர்காலம்
பித்தம்	கார்காலம்	கூதிர்காலம்	முன்பனிகாலம்
கபம்	பின்பனிகாலம்	இளவேனில் காலம்	முதுவேனில் காலம்

The incidence of Kabasuram is observed in kaar kalam, koothir kalam.

6. **Five types of lands**:

It is divided into 5 types.

kurinji : Mountain regions and surroundings.

Mullai : Forest regions and surroundings

Marutham : Cultivating regions and surroundings

Neithal : Sea coastal regions

Pallai : Desert land only.

Most of the suffers of Kabasuram belongs to Neithal and Kurinji

7. **Udal vanmai- Body immunity**:

The udal vanmai is classified into 3 types. They are,

1. Iyakai vanmai
2. Seyarkai vanmai
3. Kaala vanmai

Iyarkai vanmai :

Natural immunity of the body itself by birth.

Seyarkai vanmai:

Improving the health by intake of nutritious food materials, activites and medicines.

Kaala vanmai:

Development of immunity according to age and the environment.

When udal vanmai si affected there may be a possibility of Kabasuram.

1. வேற்றுநிலை வளர்ச்சியடைந்த பித்தத்தினை தன்னிலைப்படுத்த வேண்டும்
2. தன்னிலை வளர்ச்சியடைந்த ஐயத்தினை சமப்படுத்த வேண்டும்
3. பித்தகுற்றத்தால் பாதிப்படைந்துள்ள வாதத்தினையும் சரிப்படுத்த வேண்டும்.
4. வன்மை இழந்த உடற்கட்டுகளை வன்மை அடையச்செய்யும் வகையில் மருந்தளிக்க வேண்டும்.

Keeping in mind the need for bringing out an effective therapy for Kabasuram from Siddha system of Medicine, the author has undergone this dissertation work with the dosage of medicine in different age group.

Line of Treatment:

Siddha treatment is not only for complete healing but also prevention and rejuvenation. Saint Thiruvalluvar says about physician's duty, study the disease, study the cause, treat subsiding way and do what is proper and effect.

"நோய் நாடி நோய் முதல் நாடி அது தணிக்கும்
வாய்நாடி வாய்ப்பச் செயல். - திருக்குறள்

"உற்றான ளவும் பிணியளவுங் காலமுங்
கற்றான் கருதிச் செயல்." - திருக்குறள்

So it is essential to know the disease, the etiology, the nature of patients, severity of the illness, the seasons and the time of occurrence.

Line of treatment is as follows.

1. Kaappu (Prevention)
2. Neekkam (Treatment)
3. Pathiyam (Diet Regimen)
4. Niraivu (Restoration)

1. Kaappu (Prevention):

Prevention and cure of the diseases are the basic principle of any medical system, but prevention is the main aim of Siddha system. Siddhars have described general preventive measures and special measures. (Which are applicable to diseases of certain organs)

And especially in **Balavagadam**, the preventive measures are explained in detail. Prevention of the disease of the child starts from the conception and goes on as the child grows up in intra uterine life and after delivery. Siddhars have dealt elaborately with the diet of pregnant women, her habit, the medicine to be taken in every month, her psychological conditions, and surroundings etc.

2. Neekam: (Treatment)

The aim of treatment is based on,

a. To bring the three thodams into normal equilibrium state, emetics and purgatives are given. But considering physical condition of the children administration of purgatives and emetics is excluded from line of treatment.

b. To treat the patient according to the symptoms by internal medicine "kabasura kudineer".

Treatment of the disease by internal medicines:

Kabasura kudineer

Dosage:

2 to 5 years – 15ml [bid]

6 to 12 years – 30ml [bid]

3. **Diet Regimen**

During the course of treatment, the patients were advised to follow certain restrictions regarding diet and physical activities.

உணவின் சுவையினால் கபத்தில் ஏற்படும் மாறுபாடு

"புளிதுவர் விஞ்சுங்கறி யாற்பூரிக் கும்வாதம்
ஒளி யுவர்கைப் பேறில் பித்துச் சீறும் - கிளிமொழியே
கார்ப்பினிப்பு விஞ்சிற் கபம்விஞ்சு ஞ்சட்டிரதச்
சேரப் புணர் நோயணுகாதே"

"வாதமேலிட்டால் மதுரம் புளியுப்பு
சேதமுறச் செய்யுஞ் சிறையம் - ஓதக்கேள்

காரந் துவர்கசப்புக் காட்டுஞ் சுவை யெல்லாம்

சாரப் பரிகாரஞ் சாற்று''

- நோய் நாடல், நோய் முதல்நாடல் திரட்டு பாகம் - ஐ

According to the above said lines, sweet tasted foods will increase the kabam in our body. Acrid, astringent and bitter tasted foods will equalize the kabam.

Pathiyam (Diet):

During the course of treatment, the drug is administered to the patients according to the nature of disease and the patients were 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 பலனுண்டாகும் மருந்து

பத்தியங்கள் போனால் பலன் போகும் - பத்தியத்தில்

பத்தியமே வெற்றிதரும் பண்டிதர்க்கு ஆதலினால்

பத்தியமே உத்தியென்று பார்".

- தேரையர் வெண்பா

The patient with Kabasuram advised to avoid cool drinks, cold water and exposure to chill weather and allergens (dust, pollens, odours).

பத்தியம் நீக்கும் பொருள்கள்:

"பல் வணம் புளி கடுகு வெண்ணாலு முதலாக

ஒவ்வொரு தினமா ஒழிவராய்- நலிவிறைச்சி

கூழ்ப் பாண்ட மச்சம் பெண் கோத்திரம் கொள் பிரமபத்திரி

கீழ்ப்பாகு மெத்தவிது சீ"

- அகத்தியர் அட்டவணை வாகடம்

உப்பு, புளி, கடுகு,எள், இறைச்சி, பூசணி, கலவி, வரகு, கொள், புகையிலை, என்பன மருந்து முறிக்கும் பொருள் ஆகையால் இவற்றை நீக்க வேண்டும்.

கபத்தைத் தூண்டும் பொருட்கள்:

"ஆவினது பால் அரத்தை முள்ளங்கி மயில்
தூவி நறுஞ்சாம்பல் தூதளந்தேன் - மாவேரமந்
துய்ய சருக்கரை துழாய் விதை விளாம்பழமும்
மையதை ஓட்டு மறி."

ஆவின் பால், அரத்தை, மயில்பீலி சாம்பல், தேன், ஓமம், வெள்ளை சர்க்கரை, துளசி விதை, விளாம்பழம்

- அகத்தியர் அட்டவணை வாகடம்

சுரரோகிக்கு ஆகா பதார்த்தங்கள்:

""பால்யெண்ணெய்யிள நீர்போகம் பருகிடுங்குளிர் ந்தசோறு
கால்நடை தயிர்புளிப்பு கடுவேலையினிப்பாகு
மால்தரு மடமான்கன்றே வந்திடுஞ் சுரத்திற்காகா
ஞாலமேல்மனி தர்பேரில் நாட்டில் ஜன்னியாமே.
பச்சைமீன் யிரைச்சிக்கோழி பழங்கரி தேங்காய் மாங்காய்
இச்சைநெய் பருப்புமுட்டை யெழிலுள புனுகுகந்தம்
நச்சுக இவைகளெல்லாம் நாட்டிய சுரத்திற்காக
கொச்சைமா நிடர்கொண்டாக்கால் கொடிய மரணம் வந்திடுமே".

- பிணியற்ற வாழ்வு எனும் நோயில்லா வாழ்வு

Siddhars advice regarding the diet regimen for Kaba patients is explained below:

Siddhars advised to avoid certain food items in Kaba and Pitha noigal. They are given below:

கத்தரி, பேய்புடல, அவரை, பாகல,˙களா, அத்திக்காய,˙பீர்க்கஙகாய,˙கதலித் தண்டு முள்ளங்கி, கரும்பு, பூசினிக்காய, உள்ளி

""கத்தரி பேய்புடல வரை யிருபாகல் பருங்களா கண்டகாரி
அத்திக் காய்களும் வருக்கைமாபயற்றை கரையால் பீர்க்கரும் -பிஞ்சுவேர்
மொய்த்த சூரணங் கதலித் தண்டுகளைப் பூமுளங்கி முருக்கரும்பும்
அத்திப் பூசினிக் காயருள்ளி வள்ளியுங் கபத்தோர்க் காணமாமே"

"வேளை மணத்தக்காளி மென் சீதை சக்ரவர்த்தி
பீளை வசலை சுக்கு பெண்சுணங்கள் - வேளையிலை
செந்தளிர் களைக் கீரை செய்வர் கபதேகர் நிதம்
வந்தனியுணத்தான் மகிழ்ந்து"

- பதார்த்த குண சிந்தாமணி

4. Niraivu: (Restoration)

1. Reassurance of disease recovery was given to all patients.
2. All the patients are advised to follow the life style that provides a disease free life.

Prevention Methods:

The patients were advised,

- To find out which agent makes allergy and avoid them.
- To avoid chill and cold weather.
- To avoid cold food stuffs, ice creams, etc.
- To avoid contaminated food and water.
- To take highly nutritious diet to get their immunity developed.
- To use only boiled water

MODERN ASPECT

ACUTE BRONCHITIS

DEFINITION:

Acute bronchitis is a clinical term implying a self-limited inflammation of the large airways of the lung that is characterized by cough with or without expectoration, head ache, wheezing, rigor, malaise, constipation.

MODE OF TRANSMISSION:

The viruses that cause acute bronchitis are sprayed into the air or onto people's hands when they cough. You can get acute bronchitis if you breathe in these viruses. You can also get it if you touch a hand that is coated with the viruses.

People who have gastroesophogeal reflux disease (GERD) can develop acute bronchitis when stomach acids get into the bronchial tree.

ETIOLOGY:

1. **Infections:**
   - **i. Viral (Primary)**

The viruses that cause this condition are often transmitted when they are expelled through coughing, sneezing, and talking. They can also be transmitted through contact with infected drinking glasses and eating utensils. A wide variety of viruses containing both RNA and DNA causes acute bronchitis. They are

a. Respiratory syncytial virus (RSV)

This viruse is more virulent in the respiratory illness and are more frequent in occurrence, but the differences are not dramatic. RSV produces severe respiratory illness in a small proportion of young children infected for the first time in life. It is responsible for life threatening illness. The symptoms of this viral infection are fever, runny nose, cough, wheezing, earache, fussiness, low energy, decreased appetite.

b. Influenza virus A and B

c. Para influenza virus

There are four types of parainfluenza viruses. Parainfluenza is an agent that is sporadic in occurrence. First infection with these viruses are essentially universal upto three to four years of age, it can be estimated that over 10 percent of children first encountering these viruses require medical attention.

d. Rhino virus

This virus is responsible for major cause of respiratory illness in the autumn season. It is thought that children are responsible for spreading the different types of virus in schools and they are then introduced into families.

e. Adeno virus

This is a DNA virus. It produces a syndrome called acute respiratory diseases. It also produces the gastro intestinal symptoms.

f. Corona virus

There are two major types of coronaviruses, each of which appears to occur over a limited period of time, usually in winter and spring. Scientists have had difficulty in the laboratory working with these viruses.

g. Coxsackie virus

ii. Bacterial (Less common) :

a. Mycoplasma pneumonia
b. Streptococcus pneumonia
c. Staphylococcus aureus
d. Chlamydia pneumonia
e. Human influenza
f. Bordetella pertussis

2. Acute bronchitis is commonly associated with the following conditions

i. Influenza
ii. Measles
iii. Whooping cough

iv. Typhoid fever

Acute bronchitis may rarely be a manifestation of cystic fibrosis or hypogammaglobulinaemia.

3. Some basic underlying causes are

i. Congenital heart disease

ii. Bronchiectasis

iii. Sinusitis

iv. Rickets.

4. People at risk for acute bronchitis include:

i. The elderly, infants, and young children

ii. Persons with heart or lung disease

iii. Smokers

Being exposed to tobacco smoke, air pollution, dusts, vapors, and fumes can also cause acute bronchitis.

5. The following things can make bronchitis worse:

i. Air pollution

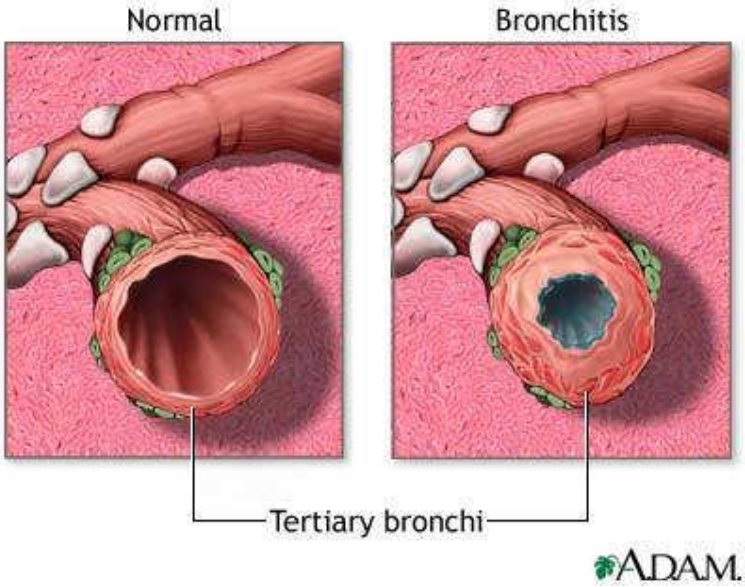
ii. Allergies

iii. Infections

6. Precipitating Factors:

i. Hospitalization
ii. Smoking
iii. Malnutrition
iv. Deficiency
v. Long Term

BRONCHITIS SCHEMATIC DIAGRAM PATHOPHYSIOLOGY:



Microorganism enter respiratory tract by droplet inhalation

↓

Widespread inflammation occurs (Increased goblet cells, squamous metaplasia of columnar epithelium, acute leukotic and lymphocytic infiltration of bronchial walls)

↓

Thin mucous lining of the bronchi can become irritated and swollen

↓

Cells that make up this lining may leak fluids in response to the inflammation

↓

Coughing as a reflex that works to clear secretions from the lungs

↓

Alveolar fluid increase

↓

Narrowing of airways

↓

Ventilation decreases as secretion thickens

↓

Mucus within the airways produces resistance in small airways and can cause Severe ventilation- perfusion imbalance

Acute bronchitis is common and most often due to infection with one of the respiratory viruses. The inflammation causes tightness of the chest and a rasping cough.

The mucus membrane of the trachea and large bronchi is red, swollen and covered with tenacious excudates which may be mucoid or purulent.

Acute bronchitis leads to the hacking cough and phlegm production that often follows upper respiratory tract infection. This occurs because of the inflammatory response of the mucous membranes within the lungs bronchial passages. Viruses, acting alone or together, account for most of these infections. If the patient is in otherwise good health, the mucous membrane returns to normal, heralding recovery from the initial active infection.

Microscopically the mucosa is greatly congested and infiltrated with leucocytes. The latter are often of mononuclear rather than polymorphonuclear type. The ciliated epithelium may be desquamated and the mucus glands are distended with mucus and show marked catarrhal change. The lumen of the bronchi is filled with pus.

Bronchitis follows either an endogenous response (eg, excessive inflammation) to acute airway injury or continuous exposure to certain noxious environmental agents (eg, allergens or irritants). An airway that undergoes such an insult responds quickly with bronchospasm and cough, followed by inflammation, edema and mucus production.

Mucociliary clearance is an important primary innate defense mechanism that protects the lungs from the harmful effects of inhaled pollutants, allergens, and pathogens. Mucociliary dysfunction is a common feature of acute and chronic airway disease states in humans. The mucociliary apparatus consists of 3 functional compartments: the cilia, a protective mucus layer, and an airway surface liquid (ASL) layer, which work together to remove inhaled particles from the lung. Animal study data have identified a critical role for ASL dehydration in the pathogenesis of mucociliary dysfunction and chronic airway disease. ASL depletion resulted in reduced mucus clearance and histologic signs of chronic airway disease, including mucus obstruction, goblet cell hyperplasia and chronic inflammatory cell infiltration.

Usually the attack resolves without residual damage, though infants with their small airways sometimes develop bronchiolitis obliterans or other more serious injury. In these conditions, small foci of acute inflammation are often superimposed on the underlying chronic inflammation. Less often acute bronchitis is due to inhalation of an irritant gas or aspiration of irritating fluids, usually from the stomach.

TYPES:

There are 2 types of Bronchitis.

1. Acute bronchitis
2. Chronic bronchitis

Acute bronchitis:

Acute bronchitis generally follows a viral respiratory infection. At first, it affects your nose, sinuses, and throat and then spreads to the lungs. Sometimes, you may get another (secondary) bacterial infection in the airways. This means that bacteria infect the airways, in addition to the virus. Most cases of acute bronchitis get better within several days. But your cough can last for several weeks after the infection is gone.

There are two types of acute bronchitis.

a) Acute infectious bronchitis
b) Acute irritative bronchitis

Acute infectious bronchitis: It commonly accompanies or follows a URTI and it develops over a couple of days, produces symptoms for 3 to 7 days and resolves to a cough before normal respiratory function is recovered.

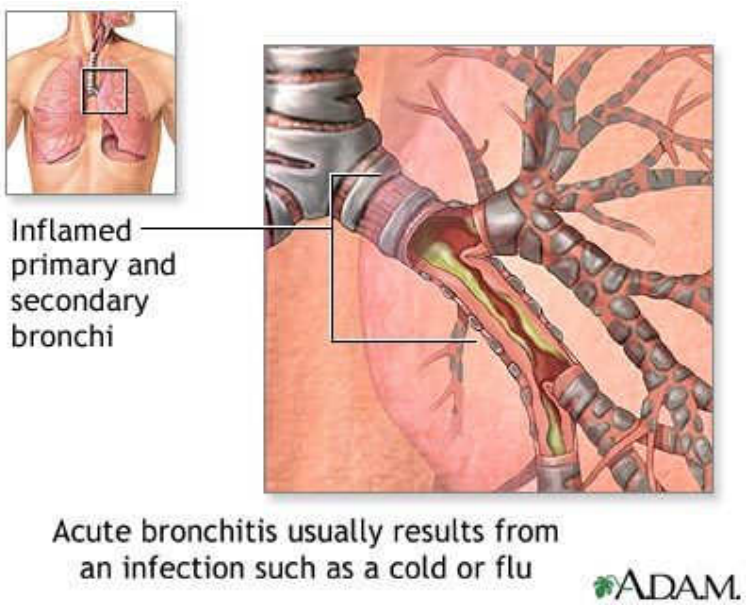
Acute irritative bronchitis: It is triggered by allergies and chemicals and other types of environmental irritants.

Chronic bronchitis:

Chronic bronchitis is a long-term condition. People have a cough that produces excessive mucus. To be diagnosed with chronic bronchitis, you must have a cough with mucus most days of the month for at least 3 months.

CLINICAL PICTURE OF ACUTE BRONCHITIS:

The clinical illness is preceded by 24 to 48 hours of lassitude or malaise. Subsequently fever and cough develop. These finding may persist for as long as one week. A relatively slow recovering phase, spanning 1 to 2 weeks. Secondary bacterial infection can complicate the recovery period, causing exacerbation of fever and other clinical findings.



Classifying an upper respiratory infection as bronchitis is imprecise. However, studies of bronchitis and upper respiratory infections often use the same constellation of symptoms as diagnostic criteria.

1. Cough:

It is an important hall mark of acute bronchitis.

The cough begins within two days of infection in most of the patients.

Most patients have a cough for less than two weeks; however, 26 percent are still coughing after two weeks, and a few cough for six to eight weeks. When a patient's cough fits this general pattern, acute bronchitis should be strongly suspected.

Coughing paroxysms or gagging on secretion is associated occasionally with vomiting.

2. Sputum Production:

Sputum may be clear, white, yellow, green, or even tinged with blood.

Peroxidase released by the leukocytes in sputum causes the color changes; hence, color alone should not be considered indicative of bacterial infection.

3. Dyspnea

4. Wheezing

5. Chest pain

6. Fever present as mild or low grade fever.

7. Hoarseness of voice

8. Malaise

9. Rhonchi and Rales.

Each of these may be present in varying degrees or may be absent altogether.

PHYSICAL EXAMINATION FINDINGS OF ACUTE BRONCHITIS:

Inspection :

Shape of the chest bilaterally symmetrical

Respiratory muscles moves with respiration

No mediastinal displacement

No scoliosis and kyphosis

No intercostal indrawing

No infra clavicular ressection

No grunting of respiration

No other pulsation

Palpation :

Apex beat – present in left v intercostal space ½ inch medial to mid clavicular line.

Trachea present in the midline

Percussion :

Resonant (Normal finding)

No other thrills

No other added resonance

Auscultation :

Bilateral entry of air equal on both lung fields

Decreased intensity of breath sounds.

Wheezing

Widespread rhonchi

Coarse Crepitations

Prolonged expiration is the auscultatory findings

MEDICAL ATTENTION FOR ACUTE BRONCHITIS:

- Severe wheezing that makes it difficult to breathe
- Worsening cough symptoms after a week
- Blood-tinged phlegm
- A mild fever that lasts longer than three days, or a fever over 101°F
- Repeated bouts of bronchitis. Children having chronic lung or heart condition, may have a chance of developing complications.

DIAGNOSIS:

1. The diagnosis of bronchitis is generally clinical, based on the history and findings of the physical examination.
2. Laboratory Investigations
    a) Raised white blood cells
    b) Elevated C- reactive protein (due to bacterial infection) – These two findings indicate inflammation
3. Nasopharyngeal swab culture for viral infection
4. Sputum examination

a) Presence of neutrophil granulocytes (inflammatory white Blood Cells)

b) Sputum culture showing pathogenic micro organisms. Eg: Streptococcus species.

5. Radiological Investigations

   X-ray chest showing hyper inflation of bronchial vessels.

COMPLICATIONS:

- Pneumonia
- Chronic bronchitis
- Acute exacerbation of bronchial asthma
- Sinusitis
- Otitis media

In healthy children complication of acute bronchitis are very few.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis is somewhat limited, but acute bronchitis should be distinguished from

- Chronic bronchitis
- Asthmatic bronchitis
- Pneumonia
- Tuberculosis
- Bronchial carcinoma

Chronic Bronchitis:

History of cough for a long period (three consecutive months in a year for more than two successive years) with sputum. Late development of wheeze and breathlessness are present. Family history is absent. Symptom free phage in childhood is present.

Asthmatic Bronchitis:

Attack is characterized by marked dyspnea, bouts of cough, expiratory wheezing, cyanosis, pallor, sweating, exhaustion and restlessness are often present. The disease should be seriously considered if the cough occurs in the early morning hour.

Acute Bronchiolitis:

The disease usually starts with coryza. There is cough, severe breathlessness, hurried respiration with expiratory grunt. There may be sucking of Supraclavicular and inter costal spaces. Central cyanosis, toxemia, restlessness, insomnia and pallor are present. Examination reveals hyper resonant lung on percussion and diffuse Crepitations with rhonchi on auscultation.

Pneumonia:

Both bacterial and viral are invariably accompanied by cough, fever, varying degrees of respiratory distress and prostration. And on auscultation, crepitations may be present. Decreased breath sounds with localized crepitations and dullness of percussion note favour consolidation. In viral pneumonia are not as severe as in bacterial pneumonia.

TREATMENT:

The anti pyretics, anti inflammatory, antibiotics and analgesic will be given to reduce the symptoms of acute bronchitis. Broncho spasm is relieved by bronchodilator drugs. Inhalation of steam may have a very soothing effect particularly in the young children.

DELAY RECOVERY CONDITIONS:

- Heart / other lung diseases
- Living in an area with air pollution
- Other health problems

PREVENTION:

- Wash the hands frequently, especially after touching public surfaces like doorknobs.
- Limiting the child's contact with people who may be sick, especially if your child is very young or especially at risk for getting sick.
- Frequently wash toys, pacifiers, and other items that children tend to put in their mouths.
- Cover your mouth and nose when coughing or sneezing, and teach your children to do the same.
- Special attention should be paid to these infection-control methods in situations where children are in large groups, such as preschools and day-care centers.
- Eat healthy foods with rich anti – oxidants to improve the immune system of our body.
- Practice mild exercise regularly.
- Avoid the exposure of irritant gases, smoke and damped and polluted areas.

REVIEW DISSERTATION STUDIES ON KABASURAM

The clinical trial which was done with the disease Kabasuram for the last two years in Govt.siddha medical college and hospital, Palayamkottai are as follows

In September 2008:

- Valuthalai chooranam – Balavagadam
- Seenthil kudineer – Balavagadam

The outcome obtained from the trail was 70% good, 20% moderate and 10% mild.

In March 2009:

- Kabasura chooranam – Anubava vaithyadeva ragasiyam
- Kabasura kudineer – Agathiyar mani 4000 ennum Vaithya sinthamani 4000

The outcome obtained from the trail was 78% good, 18% moderate, and 4% mild.

The clinical trial which was done with the disease Kabasuram in the National Institute of Siddha are as follows

In September 2007:

- Aaduthinda palai mathirai – Balavagadam
- Vishnukiranthi Kudineer – Balavagadam

The outcome obtained from the trail was 79% good,18% moderate and 6% mild.

In September 2008:

- Vallarai sura mathirai –Nam Nattu Vaithyam
- Sirukanjoriver kudineer Sarabendirar Vaithya Muraigal (Juvara Roga Sigichai)

The outcome obtained from the trail was 73% good, 20% moderate and 7% mild.

In March 2009:

- Sura kudari mathirai - Kosayi Anuboga Vaithya Brahma Ragasiyam Pagam 2
- Kabasura kudineer – Kosayi Anuboga Vaithya Brahma Ragasiyam Part 2

The outcome obtained from the trail was 70%good, 20% moderate, 10% mild.

In March 2010:

- Kanjankorai chooranam - Pillai Pini Maruthuvam,

The outcome obtained from the trail was significant in 77.5% of cases, moderate improvement was found in 22.5%.

SCIENTIFIC SIDDHA PHILOSOPHICAL REVIEW OF TRAIL DRUG:

Kabasura Kudineer

Ingredients:

Adathodi root

Thuthuvelai root

Kandangkathri root

Sirukanchori root

Siruvaluthali root

Chukku

Katrazhi sarugu

Impural

Mutthakassu

Thippili

ஆடோதோடை (Justicia adathoda)

Traditional Names : வாசை

Family Name : Acanthaceae

Part Used **:** Root

Suvai **:** Bitter

Thanmi **:** Veppam

Pirivu **:** Acrid

Action **:** Expectorant
Anti spasmodic

General Characters:

"காசமொடு மந்தங் கதித்தபித் தங்கொடுஞ்சு
வாசங் கழுத்து வலிமுதனோய்- கூசியே
ஓடாதி ராதிங் கொருநாளு மொண்டொடியே
ஆடாதோ டைத்தூருக் கஞ்சி."

- அகத்தியர் குணவாகடம்

இருமல், அழல் மிகுதி (சுவேதபித்தம்), கடினமுச்சு, கழுத்துவலி முதலியன தீரும்.

Chemical Constituents:

Leaves :

- Quinazoline Alkaloids
- Vasicine - 45-95% (the mucolytic drug bromhexine was developed from this alkaloid)
- N-oxides of vasicine
- Vasicinone
- Deoxyvasicine
- Oxyvasicinine
- Maiontone
- Essential oil

Flowers :

- B-sitosterol-D-glucoside
- Kaempferol
- Glycosides of kaempferoland
- Queretin

Roots :

- Vasicinolone
- Vasicol
- Peganine

Following studies were already done in Adathoda :

- Petroleum ether extract of adathoda shows **Expectorant**, and **Bronchodilator**

Chopra, R.N.: Indigenous Drugs of India, Academic Publishers, Calcutta (1982).

- Alcoholic extract of adathoda shows weakly **antibacterial.**

Chopra, R.N.: Indigenous Drugs of India, Academic Publishers, Calcutta (1982)

- The alkaloids vasicine and vasicinone are potent **Bronchodilators**.

Pandita, K: Planta Med, 48:81 (1983).

- **Expectorant** action is due to volatile oil.

Glasby JS. Encyclopedia of the alkaloids. London: Plenum Press; 1978. p.1367.

- Vasicinone, oxidation product of vasicine is more potent bronchodilator besides having **anti-anaphylactic activity.**

International Journal of Pharmacognosy 34(4): 308-309. {a} Dep. Pharmacognosy.

Antitussive effect of *Adhatoda vasica* extract on mechanical or chemical stimulation-induced coughing in animals:

The antitussive activity of *Adhatoda vasica* (AV) extract was evaluated in anaesthetized guinea pigs and rabbits and in unanaesthetized guinea pigs. AV was shown to have a good antitussive activity.

Journal of Ethnopharmacology, Volume 67, Issue 3, 30 November 1999, Pages 361-365

கோரைக்கிழங்கு (Cyperus rotandus)

Traditional Names : முத்தக்காசு

Family Name : Cyperaceae

Part Used : Rhizome

Suvai **:** Sweet

Thanmai **:** Thatpam

Pirivu **:** Sweet

Actions **:** Diuretics**,**
Astringent
Stimulant
Tonic

General characters:

“**சீத சுர**ந்தீர்க்குஞ் செம்புனல்பித் தம்போகும்
வாத சுரந்தணிக்கும் வையகத்தில்-வேதைசெய்ய
வந்த பிணியையெல்லாம் வாட்டுமுத் தக்காசு
கொந்துலவும் வார்குழலே! கூறு".

"அதிசாரம் பித்தம் அனற்றாகம் ஐயங்
குதிவாதஞ் சோபங் கொடிய- முதிர்வாந்தி
யாரைத் தொடர்ந்தாலும் அவ்வார்க்கெ லாங்குளத்துக்
கோரைக் கிழங்கைக் கொடு”.

- அகத்தியர் குணவாகடம்

நளிர் சுரம், குருதியழல் நோய், **சுர** வகைகள், நீர் வேட்கை, முப்பிணி, கழிச்சல், பயித்தியதோடம், பித்ததாகம், **கபரோகம்,** குதிகாலைப் பற்றிய வாயு, வாந்தி, இருமல், ஈளை, இரைப்பு, வயிற்றிரைச்சல் முதலிய நோய்கள் போம்.

Chemical constituents:

- α-Cyperone
- β-Selinene
- Cyperene
- Cyperotundone
- Patchoulenone
- Sugeonol

Following studies were already done in Koorai kizhangu:

Modern alternative medicine recommends using the plant to treat nausea, fever and inflammation; for pain reduction; for muscle relaxation and many other disorders.

Despite the bitter taste of the tubers, they are edible and have a nutritional value.

en.wikipedia.org/wiki/Cyperus rotundus

Antiinflammatory activity of Cyperus rotundus in acute models of inflammation:

In the model of carrageenan induced paw edema Cyperus rotundus showed a trend to reduce the edema while the combination of Pe + Pz (PI: 20.64%) showed results comparable to aspirin (23.74%).

21132843[PubMed - indexed for MEDLINE]

Anti viral activity:

Cyperus rotundus are found to have virucidal effect against HSV.

19666102 [PubMed - indexed for MEDLINE)

இம்பூரல் (oldenlandia umbellate)

Traditional Names : இம்பூராவேர், இன்புறா வேர், சிறு வேர், சாய வேர்

Family Name : Rubiaceae

Part Used : Whole Plant

Suvai : Sweet

Thanmi : Thatpam

Pirivu : Sweet

Action : Styptic
Febrifuge

General Characters :

"இன்புறா வேரை இதமாய் அருந்தினார்க்குப்
பின்புறா தையமொடு பித்தமுமே- துன்பாம்
இருமல் சுவாசம் எரி**சுரம்**வ யிற்றுப்
பொருமலுப்பி சம்பறந்து போம்."

அகத்தியர் குணவாகடம்

தொண்டையில் கோழை கட்டல், உடலின் அழல், அழல் சுரம், குருதி வாந்தி, இருமல், ஈளை, இரைப்பு, வயிற்றிரைச்சல் முதலிய நோய்கள் போம்.

Chemical constituents :

- Alaizarine

Following studies were already done in Impural:

Oldenlandia umbellata (called chay root or choy root, from its Tamilname)

- This plant is well-known in Siddha Medicine for its styptic property.
- It is also a drug that can be administered for bronchial asthma, as a decoction of the entire plant, a decoction made from its root and liquorice in the ratio-10:4, or the powdered root is given either with water or honey.
- A decoction of the root also is a **febrifuge.**

en.wikipedia.org/wiki/Oldenlandia umbellata

❖ ***Invitro* Antibacterial Activity of *Oldenlandia umbellata***

To find out the crude methanolic extract of *Oldenlandia umbellata* were tested against the pathogenic organisms isolated from the respiratory tract infections. It was found that the methanolic extracts of roots and aerial portion (except leaves) of *Oldenlandia umbellata* possessed high degree of antibacterial activity.

P.Arun *et al* / Journal of Pharmaceutical Science and Technology Vol. 2 (4), 2010, 198-20

சிறுகாஞ்சொறி (Tragia involucrate)

Traditional Names : கண்குடி, எருமைக்காய்ஞ்சொற்றி.

Family Name : Euphorbiaceae

Part Used : Root

Suvai : Bitter

Thanmi : Veppam

Pirivu : Acrid

Action : Diaphoretic

General Characters :

"சிறுகாஞ் சொறிவேர் சிலேத்துமசுவா சத்தைக்
குறியாத **முச்சுர**க் குழாத்தைச்-சொறியுங்
கரப்பான் சிறுசிரங்கைக் காலைத்தா கத்தை
உரப்பாகச் சாடுமென வோது."

- அகத்தியர் குணவாகடம்

சிறுகாஞ் சொறிவேரினால் ஐய இரைப்பு, முக்குற்றத்தாலுண்டாகும் சுரக்கூட்டம், சிறு சிரங்குகள், வாயு, நீர் வேட்கை ஆகிய நோய்கள் நீங்கும்.

Chemical constituents:

- Alkaloid
- Flavonoid
- Lipid
- Phenolic constitue

- Protein
- Saponin
- Triterpenoid

Following Studies Were Already Done In Sirukanjori:

❖ Roots are diaphoretic, alterative, diuretic and blood purifier.

www.mpbd.info/plants/tragia-involucrata.php

❖ Decoction of the root is useful in relieving bronchitis and the attendant fever. www.mpbd.info/plants/tragia-involucrata.

❖ ***T. involucrata*** **displayed a high antibacterial effect against different bacterial strains especially *S. aureus***

J Ethnopharmacol. 2006;107:99–106. [PubMed]

❖ **Effect of aqueous extract of Tragia involucrata Linn. on acute and subacute inflammation.**

Antiinflammatory activity of aqueous extract of Tragia involucrata was tested on carrageenan-induced hind paw oedema and cotton pellet granuloma models in albino rats. In the subacute model, cotton pellet granuloma was produced by implantation of 10 mg sterile cotton in the axilla under ether anaesthesia. The results prove that the aqueous leaf extract showed highest antiinflammatory activity in acute and subacute inflammation and also support the usage of traditional claims.

www.ncbi.nlm.nih.gov/pubmed/16557620

❖ **Preliminary studies on the anti-inflammatory and analgesic activity of the methanolic fraction of the root extract of *Tragia involucrata* Linn**

The effect of methanolic extract of *T. involucrata* was studied in different experimental animal models and it was revealed that the extract possesses significant analgesic and anti-inflammatory activity.

Journal of Ethnopharmacology-Volume 72, Issues 1-2, 1 September 2000, Pages 265-268

கற்றாழை (Aloe barbadensis)

Traditional Names : கன்னி, குமரி

Family Name : Liliaceae

Part Used : Dried Leaves

Suvai **:** Bitter

Thanmi **:** Veppam

Pirivu **:** Sweet

Action **:** Tonic
Purgative
Alterative

General characters:

கற்றாழையை உலர்த்தி முறைப்படி பொடியாகச் செய்து உண்ணில் பொழுதும் இளமையாக வன்மையுடன் நூறாண்டு வாழலாம்.

"வற்றாக் குமரிதன்னை வற்றலென வுண்ணினுஞ்சீர்
முற்றாக் குமரியென மூரூமே- நற்றாக்குந்
திண்மையு மல்லாத் தெரிவையமேயானாலு
முண்மைமிகு நூறாமா யுள்."

- தேரன் வெண்பா

கற்றாழஞ்சருகு: (கற்றாழை இலையின் உலர்ந்த இலை).

கற்றாழை வற்றல்:

"குமரியின் வற்றலும் கொளப்பிணி யகலும்."

- தேரன் காப்பியம்

கற்றாழை வற்றல் பிணியைக் கண்டிக்கும்.

Chemical constituents:

- Anthracene derivatives
- Hydroxyanthrazuinone derivatives
- Aloin,
- 7- hydroxyaloin

- Aloe emodin,
- Chrysophanol
- Aloeresin B
- Aloeresins A&C
- Aglycone aloesone.

- Indian herbal pharmacopeia revised new edition 2002

Following Studies Were Already Done In Katrai:

Anti-inflammatory activity of Aloe vera against a spectrum of irritants

The authors have evaluated the spectrum of anti-inflammatory activity of A. vera in a number of models of inflammation in the hind paw of the experimental rat induced by kaolin, carrageenan, albumin, dextran, gelatin, and mustard.

- JAPMA June 1, 1989 vol. 79 no. 6 263-276

தூதுவளை (Solanum trilobatum)

Traditional names : அளர்க்கம், சிங்கவல்லி

Suvai : Bitter

Part Used : Root

Thanmai : Thatpam

Pirivu : Acrid

Actions : Stimulant
Expectorant
Tonic

General Characters :

“தூதுவே ளையையுணத் தொக்கினிற் றொக்கிய
வேதையா நோயெலா மெய்யைவிட் டகலுமே”

தூதுவேளையை கற்பமுறையாகவேனும், கறியாகவேனும் உட்கொண்டுவர, உடலில் ஐயத்தால் ஏற்பட்ட நோய்கள் யாவும் நீங்கும்.

Chemical Constituents:

- Steroidal alkaloid Solasodine about .2%
- Solamargine
- Beta- Solamargine,
- Solasonine
- Cycloartenol
- Norcarpesterol

Following Studies Were Already Done in Thuthuvelai:

❖ **The beneficial effects could be through depletion of histamine level**

The wealth of india publication and information directorate, csir, new delhi.

❖ **Antipyretic activity also had been proved**

Journal of ethanopharmcolgy 33, 193(1991)

❖ **It used as expectorant.**

Kurup P.N.V.., Handbook of Medicinal Plants: CCRIMH, N.Delhi.

❖ **A pilot study on the clinical efficacy of *Solanum xanthocarpum* and *Solanum trilobatum* in bronchial asthma**

Solanum xanthocarpum and *Solanum trilobatum* are widely used to treat respiratory diseases in southern Indian traditional medicine (Siddha). A pilot study was undertaken to investigate the clinical efficacy and safety of a single dose of the above herbs in mild to moderate bronchial asthma. The respiratory functions (FVC, FEV_1, PEFR and $FEF_{25–75\%}$) were assessed by using a spirometer prior to and 2 h after oral administration of 300 mg powder of whole plant of either *S. xanthocarpum* or *S. trilobatum*. Standard bronchodilator drugs, salbutamol (4 mg) and deriphylline (200 mg) were used for comparison.

- Journal of Ethnopharmacology Volume 66, Issue 2, August 1999, Pages 205-210.

சிறுவழுதுனை (Solanum indicum)

Family Name : Solanaceae

Part Used : Root

Suvai **:** Bitter

Thanmi **:** Veppam

Pirivu **:** Acrid

Action **:** Expectorant
Stomachic
Antipyretic

- The root is punget, bitter, heating, digestive, astringent to be bowels, anthelmintic.
- A decoction of the root of this plant was given to cases of **Bronchitis** attended with **fever**.
- It is also used in fevers, worm complaints and colic.
- It is recorded as expectorant and useful in **cough** and catarrhal infections.
- It removes foulness of the mouth and it beneficial in cardiac troubles, leucoderma, and **Fever,** asthma, pain, **Brocnchitis**, vomiting, pruritus, leucoderma ani.
- The root taken internally manifests strongly exciting qualities. It is employed in difficult parturition and in toothache.
- It is prescribed in cases of dysuria and inchuria in the quantity of half a tea cupful twice daily.
- The fruit is bitter, pungent, anthelmentic, useful in pruritus, leucoderma, **bronchitis** “Vata”, “Kapha”, asthma, **fever**, vomiting, loss of appetite, diseases of eye.

- Indian medicinal plants1756

திப்பிலி (**Piper longum. Linn**)

Traditional Names : உன்சாரம், காமன், அர்கதி, அம்பு, ஆதிமருந்து.

Family Name : Piperaceae

Part Used : Fruit

Suvai : Sweet

Thanmai : Veppam

Pirivu : Sweet

Action : Stimulant

Carminative

General characters:

"கட்டி யெதிர்நின்று கடுநோயெல் லாம்பணியும்
திட்டி வினையகலும் தேகமெத்த – புட்டியாம்
மாமனுக்கு மாமனென மற்றவர்க்கு மற்றவனாங்
காமமெனுந் திப்பிலிக்கும் கை."

- தேரன் வெண்பா

It removes the **kaba** diseases and gives strength to the body.

Chemical constituents:

The fruits contain

- 1% volatile oil,
- Resin,
- Terpenoid substance
- Alkaloids piperine and piperlongumine.
- Pipermonaline and piperundecalidine
- Pyrrolidides-brachyamide

USES:

Rutin:

1. It enhances the metabolic rate of body thus act as thermogenesis.
2. It protects against oxidative damage by inhibiting or quenching free radicals and reactive oxygen species.

Piperine :

1. It is an N-methyl-d-aspartate (NMDA) receptor antagonistic, which contributes to its anti-convulsant property.
2. It causes decrease in total lipid contents by inhibiting enzymes involved in fat synthesis.

Following studies were already done in Thippili:

- **Immunomodulatory activity:**

The Piper longum extract possesses significant immunomodulatory.

J Ethnopharmacology. 2004 Feb; 90 (2-3): 339-346)

- **Good absorbent activity:**

Piperine is a good vehicle to absorb the other therapeutic, structurally diverse drugs and also increases the bio availability of the drugs.

- **Anti inflammatory activity:**

Anti inflammatory activity of the *Piper longum* dried fruit's oil was studied in rats using the carrageenan-induced right hind paw edema method. The activity was compared with that of standard drug ibuprofen. The dried fruit's oil inhibited carrageenan-induced rat paw edema. The results indicated that the dried fruit's oil produced significant ($p< 0.001$) antiinflammatory activity when compared with the standard and untreated control.

Indian journal of pharmaceutical sciences 2008. Volume 5, Page No 35 - 36

❖ **Antibacterial studies:**

The study investigates the antibacterial activity of *piper longum* fruit using broth dilution technique. *Staphylococcos aureus, Escherichia coli, Bacillus subtilis* are the organisms used for the study and ampicillin is used as the positive control. Previous studies show that, piperine which is one of the major constituent of piper longum show significant antitumor and antibacterial activities.

- Indian journal of Ayurvedha 2009, Volume 4, Page No 98 – 99.

❖ **Antioxidant activity:**

Piperine is one of the important constituent of *Piper longum* Linn. Piperine was isolated from the roots of the plant and by extracting with petroleum ether as solvent. Studies shows that the ether extract and piperine shows significant DPPH scavenging activity.

- http://scialert.net/fulltext/?doi=ijbc.2009.119.125

கண்டங்கத்திரி (Solanum surrantese)

Family name : Solanaceae

Part Used : Root

Suvai : Acrid

Thanmi : veppam

Pirivu : Acrid

Action : Expectorant
Diuretic

General Characters :

“வேரிலைபூ காய்பழம்வ் விதுமதன் பட்டையுமிவ்
வூரி லிருக்க உடர்கனப்பும்- நீராய்
வரும்பீந சங்கயஞ்சு வாசமுந்தங் காதே
அருங்கண்டங் கத்திரியு ளார்”.

- குணபாடம்- முதல் பாகம்

உடலின் நீரேற்றம், மூக்கில் நீர் பாய்தல், கயம், இரைப்பு, இவை போம். கண்டங்கத்திரி வேரை முரைப்படி கஷாயமிட்டு, அதில் திப்பிலிச் சூரணமும் தேனும் சேர்த்துக் கொடுக்க இருமல், நீர்தோஷம் முதலியன சுகமாம்.

Chemical constituents:

- steroidal alkaloid solasodine about .2%
- solamargine
- beta- solamargine,
- solasonine
- cycloartenol
- Norcarpesterol

Following studies were already done in Kandangkathiri:

- **Preliminary clinical trials of the drug have shown significant improvement insome respiratory diseases like bronchial asthma**

  - Jain j.p.. j. Res. Ayur. Siddha 1, 447(1980):Med.& aromat. Plants abstr.6,

- **The beneficial effects could be through depletion of histamine level.**

  - The wealth of india publication and information directorate, csir, new delhi.

- **Antipyretic activity also had been proved**

  - Journal of ethanopharmcolgy 33, 193(1991)

- **It used as expectorant.**

  - Kurup P.N.V.., Handbook of Medicinal Plants: CCRIMH, N.Delhi.

- **A pilot study on the clinical efficacy of *Solanum xanthocarpum* and *Solanum trilobatum* in bronchial asthma**

Solanum xanthocarpum and *Solanum trilobatum* are widely used to treat respiratory diseases in southern Indian traditional medicine (Siddha). A pilot study was undertaken to investigate the clinical efficacy and safety of a single dose of the above herbs in mild to moderate bronchial asthma. The respiratory functions (FVC,

FEV_1, PEFR and $FEF_{25–75\%}$) were assessed by using a spirometer prior to and 2 h after oral administration of 300 mg powder of whole plant of either *S. xanthocarpum* or *S. trilobatum*. Standard bronchodilator drugs, salbutamol (4 mg) and deriphylline (200 mg) were used for comparison. The results of the present study confirm the traditional claim for the usefulness of these herbs in bronchial asthma.

- Journal of Ethnopharmacology Volume 66, Issue 2, August 1999, Pages 205-210

❖ **Antibacterial activity of *solanum surattense* burm. F.**

Solanum surattense is the most potent plant against pathogenic microorganisms. Based on the concentrations of the extracts, the zone of inhibition was changed.

- Kathmandu university journal of science, engineering and technology March, 2010, pp 1-4.

சுக்கு (Zingiber officinale)

Traditional Names : நாகரம், அதகம், சுண்டி, கடுபத்திரம்.

Family Name : Zingiberaceae

Part used : Dried Rhizome

Suvai : Acrid

Thanmai : Veppam

Pirivu : Acrid

Action : Stimulant
Stomachic
Carminative

General Characters:

“சூலைமந்த நெஞ்செரிப்பு தோடமேப் பம்மழலை
மூலம் இரைப்பிருமல் மூக்குநீர் - வாலகப
தோடமதி சாரந் தொடர்வாத குன்மநீர்த்
தோடம்ஆமம் போக்குஞ் சுக்கு”.

- அ.கு.

Indigestion, regurgitation, body heat, gastric irritation, bronchial asthma, cough, diarrhoea, sinusitis, peptic ulcer, ear pain, headache, anaemia and Kabasuram can be cured.

Chemical Constituents:

Volatile oils (bisabolene, borneol, camphene, cineol, citral, citronellol, geranial, limonene, linalool, phellandrene, zingiberene, zingiberol). The aromatic principles are bisabolene & zingiberene

The pungent principles are gingerols & shogaols which are anti-nausea. Gingerols turn into shogaols when exposed to heat and air.

Other ingredients: Calcium, capsaicin, curcumin, high in iron and calcium, limonene, linoleic acid, magnesium, phosphorus, potassium, riboflavin, vitamin B6, vitamin C, zingibain, Ginger has proteases (GP-I and GP-II) that are similar to digestive aids bromelain.

- http://www.medicineatyourfeet.com/zingiberofficinale.html

Following studies were already done in Chukku :

- **Antibacterial activity:**

Zingibain enhances antibacterial and anti-inflammatory actions and it is thought to assist other antibacterials such as antibiotics, by up to 50%. Dried Ginger's ability to reduce inflammation is due to its neutralising action upon free radicals, which are known to contribute to the problem. Finally, ginger contains over 12 antioxidant constituents, the combined actions of which have been regarded as being more powerful than vitamin C.

- **Anti-inflammatory Activity:**

Dried ginger extract inhibited carrageenan-induced paw swelling and was as active as aspirin. Essential oil of ginger inhibited chronic adjuvant arthritis in rats. Ginger and its pungent components are dual inhibitors of arachiodonic acid metabolism. That is, they inhibit both cyclooxygenase (prostaglandin synthetase) and lipoxygenase enzymes of the prostaglandin and leukotriene biosynthetic pathways.

- **Antipyretic Activity:**

Dried ginger extract given orally reduced fever in rats by 38%, while the same dose of aspirin was effective by 15%. The antipyretic activity of 6-shogaol and 6-gingerol has also been observed.

❖ **Antioxidant Activity:**

Extracts of dried ginger have pronounced antioxidant activity comparable to that of synthetic antioxidant preservatives.

-http://www.herb-hands-healing.co.uk.

HONEY

In our system of medicine honey is considered as important adjuvant and medicine.

ACTION:

- Demulcent
- Stomachic
- Narcotic
- Astringent
- Tonic
- Antiseptic

CONSTITUENTS:

- Fructose: 38.2%
- Glucose: 31.3%
- Sucrose: 1.3%
- Maltose: 7.1%
- Water: 17.2%
- Higher sugars: 1.5%
- Ash: 0.2%
- Other/undetermined: 3.2%

Its glycemic index ranges from 31 to 78, depending on the variety.

TYPES OF HONEY:

There are five types of honey. They are malai then, kombu then, marapondhu then, putru then and manai then. Among these types, malai then is used in medicine.

MALAI THEN:

“ஐயமிரும லீளைவிக்க லக்கிப்புண் வெப்புடல் நோய்
பைய யொழியும் பசியுமுறும் - வையகத்தி
லெண்ணுமிசை யாமருந்திற் கேற்ற வனுபான
நண்ணுமலைத் தேனொன்றி னால்”.

- குணபாடம்

Kabam, cough, hicough, herpes simplex and increased body temperature can be cured. It increases the appetite. In this world, malai then is the best adjuvant for the medicine.

MEDICINAL USES OF HONEY:

1. The Antiseptic and antibacterial properties of honey been chemically explained.
2. As an anti microbial agent honey may have the potential for treating a variety of ailments. i.e., particulars type of honey may be useful in treating MRSA infections.
3. Its effect on doshas is that it aggravates vata, scrapes kapha and normalizes pitta and rakta . It promotes healing process.
4. Honey appears to be effective in killing drug-resistant biofilms which are implicated in chronic rhinosinusitis.
5. Honey has also been used for centuries as a treatment for sore throats and coughs, and according to recent research may in fact be as effective as many common cough medicines
6. A more recent study has shown pollen collected by bees to exert an anti allergenic effect, mediated by an inhibition of IgE immunoglobulin binding to

mast cells. This inhibited mast cell degranulation and thus reduced allergic reaction.

MATERIALS AND METHODS

The patients suffering from Kabasuram were selected for the study. Patients were well examined and diagnosis was confirmed with the consultation and direction of the kuzhandhai Maruthuvam department, teaching staff and HOD. Them and there the opinion of the modern pediatric professor was obtained. The protocol for the study was prepared and presented in the IEC and got approved. The methodology was strictly followed as per the protocol. The detail of the protocol is attached in annexure.

Study Design and Conduct of the Study

This is the open clinical observational study. No blinding. Eligible children with Kabasuram i.e. who were fulfill the inclusion criteria for this study were enrolled and strictly followed the ASU clinical research guidelines.

Population and Sample

40 children suffered from Kabasuram were enrolled for the study.

Treatment

The aw drug for Kabasura kudineer (KBS) were purchased from well reputed country shop and authenticated by the Dept of medicinal botany in NIS and the formulation were prepared according to the siddha literature mentioned. KBS powder was distributed to the parents/ guardians of the children and label showed extensive details about the usage of the drug and also explained practically. Dosages of the experimental drug have been calculated as per the siddha text. Drug stored in the airtight sterile container and distributed in the same. Duration of the treatment period was only 3 days.

Dosage:

2 to 5 years – 15ml [Bid]
6 to 12 years – 30ml [Bid]

Subject Selection Criterias:

Inclusion Criteria:

- Age 1 to 12 years
- Patients, who are having classical symptoms like Fever, Wheezing, Dry or productive cough, Chest pain, Head ache, Constipation, Running nose, Fatigue, Polyarthralgia.
- Willing to give specimen of blood for investigation when required.
- Willing to attend the OPD on fourth day of treatment.

Exclusion Criteria:

- Patients is not eligible for admission to the trail if any following is applicable Convulsions, Jaundice, Typhoid, Malaria, Active primary complex, Pneumonia, Rheumatic fever.
- Patient not willing to give biological sample whenever required.
- Patient not willing to give consent for the study

Withdrawl Criteria:

- Exacerbation of symptoms
- Occurrence of any adverse effect such as diarrhea, abdominal discomfort.
- Patient turned to unwilling during the course of trial drug.

Methods followed During the Course of Study:

- ❖ The suspected patients were examined clinically and screened using screening form.
- ❖ Those who had inclusion criteria and not had any exclusion criteria, the patients were enrolled for this study.
- ❖ The enrolled patients were informed about the study, trial drug, possible outcomes and the objectives of the study in the language and terms understandable to the patients and informants.
- ❖ After ascertaining the informant's willingness, informed consent was obtained in writing from them in the consent form.
- ❖ Clinical assessment and Laboratory investigations were used for recording the patient's history, clinical examination of signs and symptoms and lab investigations respectively.

- ❖ Patients were advised to take the trial drug and appropriate dietary advices for perfect understanding.

Assessment and tests :

Clinical Assessment :

- ➢ Fever
- ➢ Cough with or without expectoration
- ➢ Breathlessness
- ➢ Wheezing, Arthralgia
- ➢ Fatigue
- ➢ Constipation
- ➢ Head ache

Siddha method of assessment :

- ➢ Poriyal arithal
- ➢ Pulanal arithal
- ➢ Uyirthathukkal
- ➢ Udal thathukkal
- ➢ Envagai thervugal

Laboratory Investigation:

- Blood Test – TC, DC, ESR, HB, Widal, CRP, Peripheral smear for MP, Peripheral smear for MF.
- Urine Test – Albumin, Sugar, Deposit, BS, BP, Urobilinogen
- Serum: Urea and Creatinine
- Serum: SGOT, SGPT

The patients were asked to attend the OPD on the 4^{th} day and also instructed to bring back unconsumed trial drugs return. For IPD patients, the trial drug was given daily.

Data Management :

After enrolling the patient in the study, a separate file for each patient opened and all forms were filed in the filled. Whenever the study patient visits OPD during the study period, the respective patient file were taken and necessary entteries were made at the assessment form or other suitable form.

The screening forms were filled separately.

The Data recordings were monitored by lecturers, HOD & statistician (Sr. Research Officer (Statistics)). All forms were further scrutinized in presence of Investigators by Sr. Research Officer (Statistics) for logical errors and incompleteness of data before entering into computer to avoid any bias. No modification in the results is permitted for unbiased report.

All collected data entered using MS access software onto computer.

Results Observational Grading :

G1: Complete clearance of all symptoms of Kabasuram

G2: Reduced symptoms of Kabasuram

G3: All symptoms of Kabasuram will be persistent

AE / SAE Management :

If any AE/ SAE was observed during the study immediately informed to IEC and also will treat for the untoward reactions.

Data Collection Forms :

- Screening and selection Proforma
- Consent form
- History Proforma on enrollment
- Laboratory investigation on enrollment
- Clinical Assessment for during and after treatment assessment
- Withdrawal form
- Adverse reaction form

- Drug compliance form
- Diet Advice form

Statistical Analysis :

Changes in subjective parameters were analyzed using paired X^2 – test and changes in objective parameters were analyzed using paired t – test.

Ethical Issues :

All the ethical issues were followed strictly.

- To prevent any infection, while collecting blood sample from the patient, only disposable syringe, disposable gloves, with proper sterilization of lab equipments were used.
- The formulation mentioned in the **Athma Ratcha Miratham Enum Vaithiya Sara Sangirakam** was used for the study.
- No other external or internal medicines were used. There was no infringement on the right of patient.
- The data collected from the patient were kept confidentially. The patient was informed about the disease and treatment.
- After the consent of the patient (through patient consent form), he/she was enrolled in the study.
- Treatment provided at free of cost.
- In conditions of treatment failure and adverse reactions, patients had given alternative treatment at the National Institute of Siddha with full care throughout the end.
- The Director, H.O.D, SRO and Ethical members can monitor the patient profile at any time regarding the research.

Bio chemical analysis was done both qualititative and quantitative. (Results were attached in annexure III)

The following pharmacological studies were done

- Anti pyretic activity
- Anti inflammatory activity

- Analgesic activity
- Anti- Hystamine activity. (Results were attached in annexure IV)

The following toxicological studies were done

- Acute toxicological studies
- Repeated oral toxicity studies. (Results were attached in annexure IV)

RESULTS AND OBSERVATIONS

40 Patients with confirmed diagnosis of Acute Bronchitis with satisfying the inclusion criteria were enrolled after obtaining written informed consent and were to receive kabasura kudineer with the dosage of

2 to 5 years – 15ml [bid]

6 to 12 years – 30ml [bid]

With Thippili Chooranam:

2 years- 520 mg,

3 years- 650 mg,

4 years- 975 mg,

5 years to 7 years- 1.3 gm,

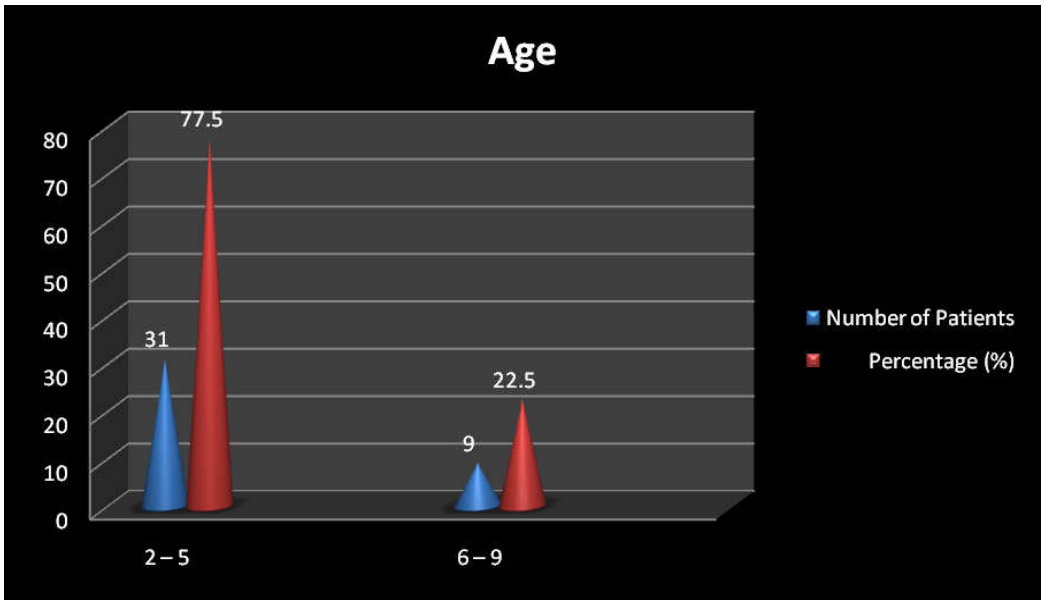
8 years to 12 years- 2 gm.

Results were observed with respect to the following criteria :

1. Age
2. Sex
3. Parents Socio Economic Status
4. Paruvakaalam
5. Uyir thathukkal
6. Ezhu udal kattugal
7. Envagaithervugal
8. Neikuri
9. Cllinical features
10. Haematological profile
11. Biochemical analysis
12. Pharmacological analysis
13. Result

Table: 1. Incidence of age among the patients with Kabasuram

Age (Year)	Number of Patients	Percentage (%)
2 – 5	31	77.5
6 – 9	09	22.5
Total	**40**	**100**

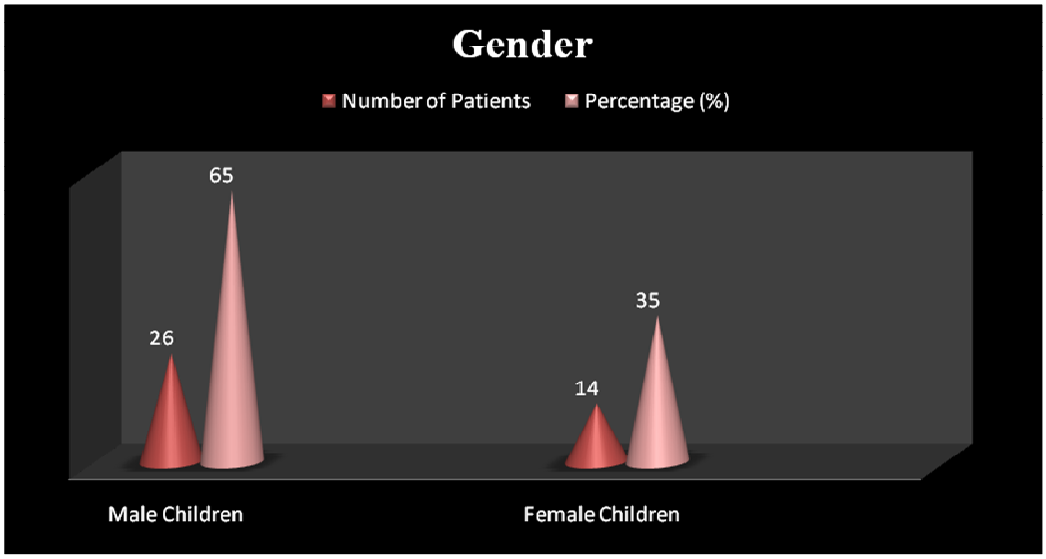


Inference:

In 40 patients, 77.5% of cases were 2-5 years, 22.5% were 6-9 years. Most of the cases were in 2 to 5 age group.

Table: 2. Incidence of gender among the patients with Kabasuram:

Gender distribution	Number of Patients	Percentage (%)
Male Children	26	65
Female Children	14	35
Total	**40**	**100**

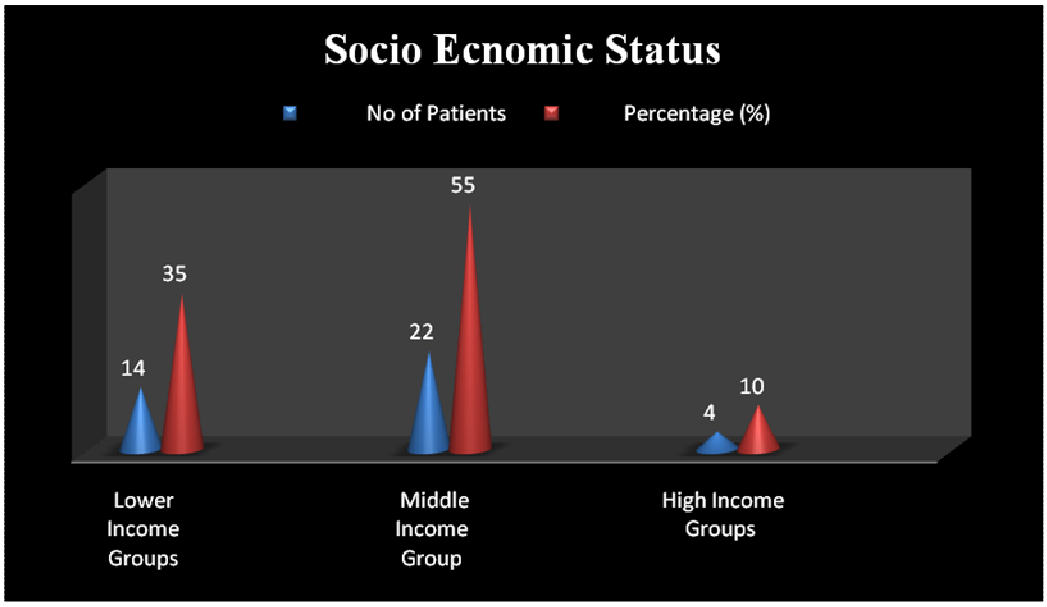


Inference:

Out of 40 patients 65% were male children and 35% were female children (Table 2).

Table3. Incidence of socio economic status among the patients with Kabasuram

Socio economic status	No of Patients	Percentage (%)
Lower Income Groups	14	35
Middle Income Group	22	55
High Income Groups	04	10
Total	**40**	**100**



Inference:

About 35% patients were under Lower Income Group, 55% patients were under Middle Income Group and 10% patients were under High Income Group. The highest incidence occurred in middle Income Group.

Table4. Incidence of seasonal variation among the patients with Kabasuram:

Paruva kalam	No of cases	Percentage (%)
Kaar(Avani, Purattasi)	10	25
Koothir(Iypasi, Karthigai)	30	75
Munpani(Margali, Thai)	-	
Pinpani(Masi, Pankuni)	-	
Elavenil(Chithirai, Vaikasi)	-	
Mudhuvenil(Aani, Aadi)	-	
Total	**40**	**100**

Inference:

According to paruva kaalam, high incidence of cases (75%) were noted in Kothirrkaalam. 25% of cases werw noted in Kar kalam (Table 4)

Table 5.A. Incidence of vadham among the patients with Kabasuram:

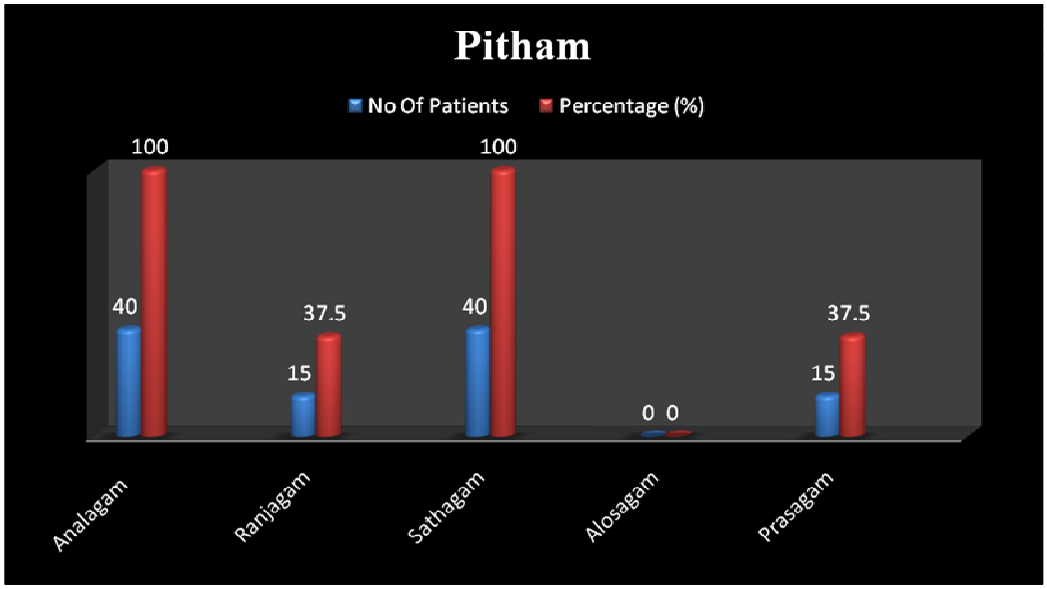
Types of Vatham	No of cases	Percentage (%)
Pranan	40	100
Abanan	15	37.5
Viyanan	40	100
Uthanan	40	100
Samanan	40	100
Naagan	-	
Koormam	-	
Kirukaran	34	85
Devathathan	-	
Dhananjeyan	-	-

Inference:

According to vadham, derangement of Pranan, Viyanan, Uthanan and Samanan was 100%, Abanan was deranged in 37.5%, kirukaran was deranged in 85%.

Table 5.B. incidence of patients with Kabasuram according to Azhal (Pitham)

Types Of Azhal	No Of Patients	Percentage (%)
Analagam	40	100
Ranjagam	15	37.5
Sathagam	40	100
Alosagam	-	-
Prasagam	15	37.5

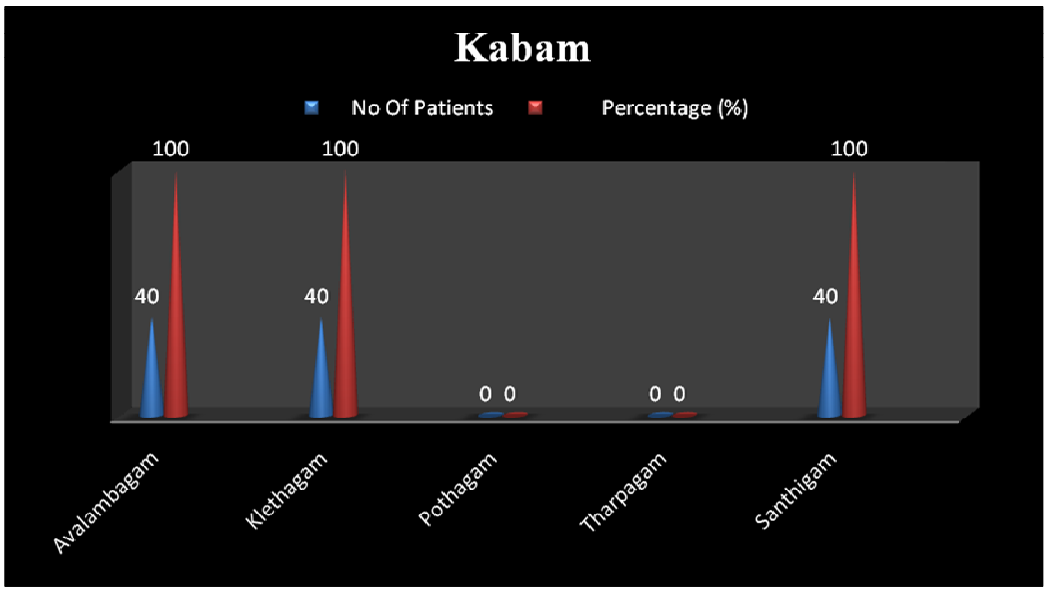


Inference:

According to Azhal, Analagam and Sathagam were affected in 100% of cases, Ranjagam was affected in 37.5% of cases, Prasagam were affected in 37.5% of cases.

Table 5.C. Incidence of patients with Kabasuram according to Iyyam (Kabam)

Types Of Iyyam	No Of Patients	Percentage (%)
Avalambagam	40	100
Klethagam	40	100
Pothagam	-	-
Tharpagam	-	-
Santhigam	40	100

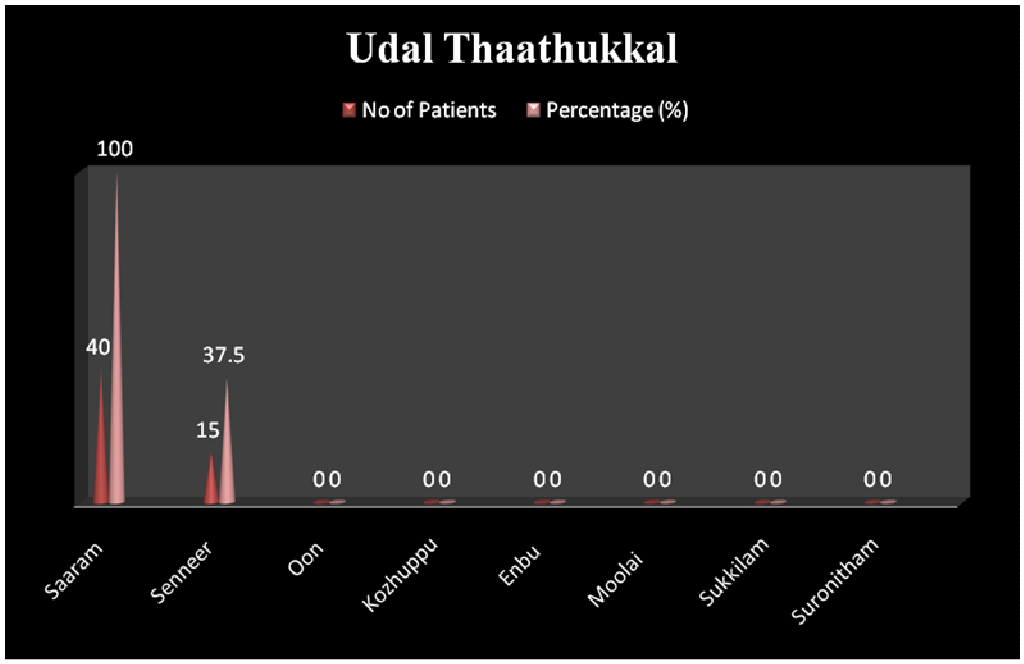


Inference:

According to Iyyam, Avalambagam, Klethagam and Pothagam were affected in 100% of cases.

Table 6. Incidence of Ezhu udal thaathukkal among the patients with Kabasuram

Udal thaathukkal	No of Patients	Percentage (%)
Saaram	40	100
Senneer	15	37.5
Oon	-	-
Kozhuppu	-	-
Enbu	-	-
Moolai	-	-
Sukkilam	-	-
Suronitham	-	-



Inference:

Saram was affected in 100% of cases, senneer was affected in 37.5% of cases.

Table7. Incidence of Envagai thervugal among the patients with Kabasuram

Ennvagai thervukal	No of cases	Percentage
Naadi: Vathapitham	17	42.5
Pithavatham	20	50
Pithakabam	3	7.5
Sparisam	40	100
Naa	15	37.5
Niram	15	37.5
Mozhi	-	-
Vizhi	17	42.5
Malam	15	37.5
Moothiram	-	-

Inference: In Naadi, Vathapitham was observed in 42.5% of cases, Pithavatham was observed in 50% of cases, pithakabam was observed in 7.5% of cases.

Out of 40 cases coated and slightly dried tongues were noted in 37.5% cases.In Niram, pallor of skin was observed in 37.5% of cases, 42.5% of cases were found pallor conjunctiva.Out of 40 cases, fever was observed in all 40 cases. According to Malam, Irugal was observed in 37.5% of cases. (Table 7)

Table8. Incidence of Neikuri among the patients with Kabasuram

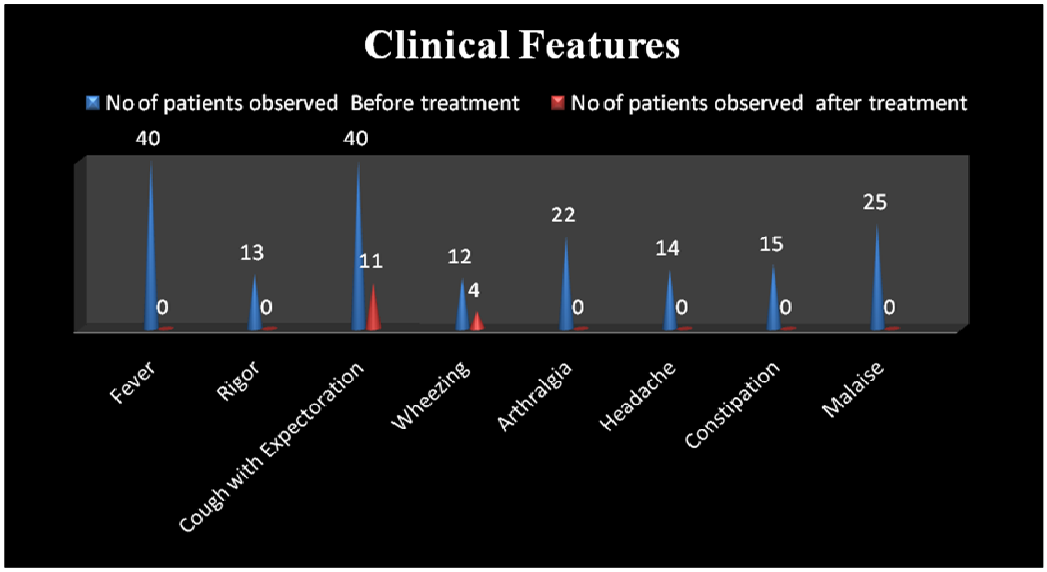
Neikuri	No. of Patients	Percentage (%)
1.Vaatham	11	27.5
2.Pitham	9	22.5
3.Kabam	20	50

Inference:

According to Neikuri, Vatha neer was observed in 27.5% of cases, pitha neer was observed in 22.5% of cases, Kaba neer was observed in 50% of cases.(table.8)

Table 9. Incidence of clinical features among the patients with Kabasuram

Clinical features	No of patients observed Before treatment	Percentage (%)	No of patients observed after treatment	Percentage (%)
Fever	40	100	0	0
Rigor	13	32.5	0	0
Cough with Expectoration	40	100	11	27.5
Wheezing	12	30	4	10
Arthralgia	22	55	0	0
Headache	14	35	0	0
Constipation	15	37.5	0	0
Malaise	25	62.5	0	0



Inference:

Among the 40 cases, at the end of the treatment, 100% of the patients relieved the symptoms of Fever, Rigor, Headache, Arthralgia, Constipation, malaise. 27.5% of patients had cough, 10% of patients had Wheezing.(Table.9)

10. LABORATORY INVESTIGATIONS

Most of cases were had leucocytosis, lymphocytosis, increased ESR, reduced Hemoglobin level. Widal, Smear for MP and Smear for MF negative for all cases.

11. BIOCHEMICAL ANALYSIS

The Bio chemical analysis of trial medicine showed the presence of calcium and ferrous iron, potassium, magnesium, sodium, sulphur, phosphate, fluride. (Attached in annexure IV)

12. PHARMACLOLOGICAL ANALYSIS

The trial drug has significant anti pyretic, analgesic, and acute anti inflammatory and anti Histaminic activity. (Attached in annexure V)

13. RESULT

S.No	Result	No. of Patients	Percentage (%)
1.	Good	29	72.5
2.	Moderate	11	27.5
	Total	**40**	**100**

Inference:

Out of the 40 cases, the signs and symptoms were relieved in 72.5% of cases. Symptoms and signs were reduced in 27.5% of cases. These results were based on the clinical improvements.

Statistical Analysis:

All collected data were entered into computer using MS Excel software. The data entry was cross-checked manually with CRF. The data was analysed using SPSS version 18.0 software. The probability value 0.05 was taken as significant level. Paired 't' test was employed to determine the significance of blood sugar at before and after treatment.

Mean ±Standard deviation of clinical features (CF) of Kabasuram at CF- Before and after treatment

CF – Before	4.50 ±.599	t = 36.094, p <0.0001 Significant
CF – After	.38 ±.540	

The average clinical features of acute bronchitis at the start of treatment and after the treatment were 4.50 and .38 respectively.

There is statistically significant difference between before and after treatment of clinical features of Kabasuram ($p<0.0001$).

Mean ±Standard deviation of Half an hour ESR - Before and After treatment

½ ESR – Before	6.85 ± .554	t = 7.791, p <0.0001 Significant
1/2 ESR– After	3.30 ±.209	

The average half an hour at the start of treatment and after the treatment were 6.85and 3.30 respectively.

There is statistically significant difference between before and after treatment of half an hour ESR ($p<0.0001$).

Mean ±Standard deviation of one hour ESR - Before and After treatment

ESR 1 hour – Before	12.90 ± .997	t = 7.400, p <0.0001 Significant
ESR–1 hour- After	7.00±2.602	

The average half an hour at the start of treatment and after the treatment were 12.90 and 7.00 respectively.

There is statistically significant difference between before and after treatment of half an hour ESR ($p<0.0001$).

DISCUSSION

"Kabasuram" is a most common infectious disease of respiratory tract of childhood. Kabasuram more or less resembles acute bronchitis in modern medicine. The disease is characterized by fever, cough, with or without expectoration, wheezing, malaise, rigor, Constipation, polyarthralgia.

In the present study, forty cases were treated in the outpatient and inpatient department, according to clinical features mentioned in textbook of Pillaippini Maruthuvam.

The diagnosis is based on clinical assessments and laboritical investigations.

The diagnosis was confirmed and treated with the trail drug "Kabasura kudineer" and the result was clearly observed.

This study evaluates the effect of Kabasura kudineer in relieving the symptoms of Kabasuram.

DISEASE REVIEW

Since the Kabasuram is a Kapha-dominated disease, its incidence will be witnessed more during the Koothirkalam. This increased risk remained in boys aged 2 to 5 years in this study.

CLINICAL REVIEW

- **AGE:**

  In the present study, maximum number of patients (77.5%) was in the age group of 2 to 5 years. Even though in the classical literature, ordinarily, we do not find a mention of the relation between Kabasuram and age.

- **SEX:**

  Maximum number of patients (65%) was male. No relation between the gender and Kabasuram has been established by the ancient writers. Similarly, during the modern era also, no such relation has been established.

- **EDUCATION STATUS:**

  Majority of the patients were school going. Of them, a large percentage of 50% were primary students.

- **GUNAM**:

  Majority is dominant in Rajo, Guna. All children are sensitive and have comparatively low tolerance. Still, based on behavior, activity, out spookiness, cooperation in treatment, relative tolerance, and with respect to age, this classification is done.

- **SEASONAL VARIATION**:

  Koothir Kalam was the triggering factor in aggravation of the disease Kabasuram and was observed in 75% of patients. Kabasuram is highly influenced by seasonal variations.

  While discussing the time of aggravation of Kabasuram, the Siddhars have pointed out that the Kabasuram aggravated during the rainy season and winter season.

  Adverse weather conditions, such as cold temperatures, high humidity, infection and episodes of acute pollution brought on by weather conditions that promote the concentration of atmospheric pollutant and antigen, have been associated with acute bronchitis.

- **VALI (VATHAM)**

  Due to the derangement of different types of vadha the following symptoms occur. Pranan was affected 100% and causes cough and wheezing. Abanan was affected 37.5% and causes constipation. Samanan was affected 100% and causes poor appetite. Uthanan was affected 100% causes cough, and Kirukaran was affected 85%, causes running nose.

- **AZHAL (PITHAM)**

  Due to the derangement of Pitham the following symptoms occur. Analagam was affected 100% and causes poor appetite. Ranjakam was affected 37.5% and causes reduced haemoglobin. Saathakam was affected

100% and causes fatigue and malaise. Pirasakam was affected 37.5% and causes pallor of skin.

- **IYYAM (KABAM)**

Deranged Avalambagam was affected 100% and causes cough Klethagam was affected 100% and causes poor appetite, Santhigam was affected in all cases malaise.

- **EZHU UDARKATTUGAL**

In Ezhu udal kattukal, Saram was affected in 100% of cases and cause malaise. Seneer was affected in 37.5% of cases Anaemia.

- **ENVAGAI THERVUGAL**

According to this study,

Naa was affected in 37.5% of cases causes coated, and pallor tongue.

Vizhi was affected in 37.5% of cases and causes pallor of conjunctiva.

Sparisam was affected in 100% of all cases and causes raised temperature.

Malam was affected in 37.5% of cases and causes constipation.

Naadi:

Vathapitham was observed in 42.5% of cases,

Pithavatham was observed in 50% of cases,

Pithakabam was observed in 7.5% of cases.

According to naadi, high Distribution observed in Azhal vali naadi. In siddha literature, the character of Azhal vali is mainly constipation, poor appetite, abdominal pain, indigestion and nausea.

- **NEERKURI**

Regarding Moothiram, Neerkuri showed straw coloured urine in all cases.

- **NEIKURI**

In the present study, 27.5% of patient had vatha neikuri, 22.5% was observed as pitha neikuri and 50% was observed as kaba neikuri. According to this neikuri, Kabam was dominantly affected.

- **CLINICAL PRESENTATION**

Of the 40 patients of Kabasuram in the present clinical trial,

All (100%) had Fever, Cough as chief complaints.

Wheezing was reported in 30%

Rigor in 32.5%

Malaise in 62.5%

Head ache in 35%

Arthralgia was seen in 55%

Constipation was seen in 37.5%

The clinical improvements were accurately noted in the clinical assessment form and further follow up was made in outpatient and inpatient department.

- **LABORATORY INVESTIGATIONS**

Most of cases were had leucocytosis, lymphocytosis, increased ESR, reduced Hemoglobin level. Widal, Smear for MP and Smear for MF negative for all cases.

- **BIOCHEMICAL ANALYSIS**

The Bio chemical analysis of trial medicine showed the presence of calcium and ferrous iron, phosphate, fluride. Ferrous iron is more soluble and therefore more readily absorbed. Iron helps in increasing the haemoglobin level of blood. (Attached in annexure III)

- **PHARMACLOLOGICAL ANALYSIS**

The trial drug has significant anti pyretic, analgesic, and acute anti inflammatory and anti Histaminic activity. Which are very much favorable to treat the disease Kabasuram. (Attached in annexure IV)

DRUG REVIEW

The drug KABASURA KUDINEER consists of many ingredients which excellently enhance the Deepanamundaaki and neutralize the Kappa Kutra Thannilai vallarchi, which are the main Dodams in the pathogenesis.

The trial medicine chosen for treatment of Kabasuram was “Kabasura kudineer”. The ingredients of this drug have the property of controlling Kabasuram.

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

Kandangkathiri, chukku have mainly an anti pyretic action and it reduces the temperature and vitalizes the derranged humour.

Sirukaanjori ver have an effective anti inflammatory and a good expectorant action.

Adothoda ver have a potent anti microbial, antipyretic activity and anti inflammatory activity.

Thippli have an effective anti inflammatory and anti microbial activity.

Kadangkathiri ver, adathoda have effective bronchodilator, antimicrobial, anti inflammatory.

Chukku have an effective expectorant activity.

Impural have antipyretic, anti bacterial activity.

Kooraikizangu have anti inflammatory, anti microbial activity.

Katrazhai have antimicrobial activity.

All the drugs have anti oxidant activity.

The adjuvant honey have an effective antiseptic and anti microbial activity. It has a soothing effect on the mucous membrane and it promotes the healing process.

The results of the study suggest that treatment with kabasura kudineer has significant improvement in patients of Kabasuram. Out of the 40 cases, the signs and symptoms were relieved in 72.5% of cases. Symptoms and signs were reduced in 27.5% of cases. These results were based on the clinical improvements.

SUMMARY

Paediatric Patients attending the OPD, IPD of NIS having the complaint of Kabasuram provisionally diagnosed and the patients were observed for clinical diagnosis with laboratory findings.

Classical symptoms of Kabasuram having similarity with the symptoms of Acute Bronchitis like Fever, Cough with or without Expectoration, Wheezing, Arthralgia, Malaise, and Constipation.

Clinical diagnosis of Kabasuram was done on the basis of clinical features described in Pillai Pini Maruthuvam text.

Laboratory diagnosis was done by modern methods of examinations.

Diagnosis had been based on the specially prepared proforma, including all clinical signs and symptoms of the disease, in which detailed history had been taken

The signs, symptoms, and etiopathogenesis of acute bronchitis explained in modern medicine have lot of similarities with the disease entity Kabasuram.

The medicine chosen for clinical treatment and management of Kabasuram was kabasura kudineer internally two times in a day for 3 days.

All the patients were kept under strict dietary control during the treatment. The observation on effect of therapy was encouraging.

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 Kabasura kudineer was clinically effective.

In Bio chemical analysis, the trial medicine had calcium, ferrous iron, phosphate, and Fluride, which also favour the effect of kabasura kudineer in the treatment of Kabasuram.

In pharmacological analysis, the trial drug Kabasura kudineer had acute anti-inflammatory, anti-pyretic, anti histaminic action, The pharmacological studies reported on the trail drugs also favor its effect in disease of acute bronchitis.

CONCLUSION

All the forty patients of Kabasuram were treated with Kabasura kudineer, internally two times in a day.

The ingredients of Kabasura kudineer are affordable, easily available and harmless to children.

The medicine has many properties to control the signs and symptoms of Kabasuram. During the course of treatment, no adverse effects were observed.

Clinical results were found to be significant in 72.5% of cases, moderate improvement was found in 27.5%.

Because of the efficient results clinically, the study may be carried over to further researches and it may motivate the upcoming generation to manage the disease Kabasuram through the siddha medicine and also this study throw new glitters for the Siddha scientific committee.

The present clinical study has established that kabasura kudineer is having good result in reducing the majority of symptoms and signs of the Kabasuram.

This has, in turn, provided a golden opportunity for new drug established in the management ofKabasuram.

Before Treatment(OPD Patient) Haematology												After Treatment(OPD Patient) Haematology								
S/NO	OP NO	A/S	Hb	Tc	DC (cells/cumm)				TRBC	ESR(mm)		Hb	Tc	DC (cells/cumm)				TRBC	ESR(mm)	
			Gms %	cells/ cumm	P	L	E	M	cls/cumm	1/2 hr	1 hr	Gms%	cl/ cumm	P	L	E	M	cells/ cumm	1/2 hr	1 hr
1	C8915	4/FCH	13.3	12800	41	56	3	_	4.7	6	12	13.4	10500	56	41	3	_	4.7	2	6
2	B40042	4/MCH	10.9	8400	57	38	5	_	3.9	8	16	10.9	8100	65	33	2	_	3.9	2	4
3	C10060	4/MCH	9.7	10300	55	40	5	_	3.7	14	28	9.7	9000	66	30	4		3.7	4	8
4	C13367	3/MCH	9.2	6800	57	39	4	_	3.1	4	8	9.2	7500	76	23	1		3.1	2	4
5	C830	2/MCH	10.6	8000	65	30	5	_	4	4	12	10.7	8500	67	29	4		4	2	6
6	C17751	4/MCH	10.9	9400	57	40	3	_	3.8	8	16	10.9	9100	67	30	3		3	4	8
7	C21875	4/FCH	11.7	13000	68	28	4	_	4.2	4	8	11.7	9500	70	26	4		4.2	4	8
8	C22898	2/MCH	10.8	7600	65	33	2	_	3.6	4	8	10.8	7600	71	27	2		3.6	4	8
9	C12072	2/MCH	9.6	7700	56	41	3	_	3.1	6	12	9.7	7500	67	30	3		3.1	2	4
10	C23082	2/MCH	11.2	10200	60	36	4	_	4	4	8	11.2	9500	67	29	4		4	2	4
11	C21688	4/MCH	9.7	7200	71	27	2	_	3.9	8	16	9.7	7200	71	28	1		3.9	4	8
12	C13367	3/MCH	9.2	6800	57	39	4	_	3.1	4	8	9.2	7000	62	34	4		3.1	2	4
13	B97495	4/MCH	10.2	9800	63	35	2	_	3.9	8	12	10.2	9500	68	30	2		3.9	4	8
14	B86818	4/MCH	11.2	8700	62	36	2	_	4.2	4	8	11.2	8700	68	30	2		4.2	2	4
15	C25362	3/FCH	9.7	15800	78	18	4	_	4	6	12	9.7	12000	75	21	4		4	2	4
16	C16052	3/MCH	10.6	7300	48	46	6	_	4.1	4	8	10.6	7800	62	36	2	_	4.1	2	4
17	C9737	4/FCH	10.8	8500	73	26	1	_	4	4	8	10.8	8700	70	29	1	_	4	2	4
18	C26967	4/FCH	8.4	7800	47	44	9	_	3.1	8	16	8.4	8100	62	33	5	_	3.1	4	8
19	C25776	3/FCH	9.7	12000	65	32	3	_	3.6	4	8	9.7	10100	67	31	2	_	3.6	2	4
20	B76749	4/MCH	10.3	8500	61	34	5	_	4.1	6	12	10.3	8800	68	30	2	_	4.1	2	12
21	C27217	4/MCH	9.7	8600	49	47	4	_	3.6	12	24	9.7	8400	60	38	2	_	3.6	4	10
22	C27181	2/MCH	8.5	6500	55	44	5	_	3.4	4	8	8.5	8200	67	22	1	_	3.4	2	4

Before Treatment(OPD Patient) Haematology												After Treatment(OPD Patient) Haematology								
S/NO	OP NO	A/S	Hb	Tc	DC (cells/cumm)				TRBC	ESR(mm)		Hb	Tc	DC (cells/cumm)				TRBC	ESR(mm)	
			Gms %	cells/ cumm	P	L	E	M	cls/cumm	1/2 hr	1 hr	Gms%	cl/ cumm	P	L	E	M	cells/ cumm	1/2 hr	1 hr
23	c25432	2/MCH	11.1	10200	45	50	5	_	4.1	8	12	11.1	9900	58	38	4	_	4.1	4	8
24	B60287	3/MCH	10.2	8700	65	30	5	_	4.1	4	8	10.2	8800	66	32	2	_	4.1	2	4
25	C19844	3 FCH	9.7	7200	56	41	3	_	4.2	8	16	9.7	7800	65	33	2	_	4.2	4	8
26	A33878	3/FCH	11.7	13000	68	28	4	_	4.2	4	8	11.7	9900	68	30	2	_	4.2	4	8
27	C29298	2/MCH	9.2	6800	57	39	4	_	3.1	4	8	9.2	7800	64	33	3	_	3.1	4	8
28	C14327	2/FCH	10.9	9400	57	40	3	_	3.8	8	16	10.9	9000	62	35	3	_	3.8	4	8
29	C9737	4/FCH	9.7	10300	55	40	5	_	3.7	14	28	9.7	9100	58	40	2	_	3.7	6	10
30	B93945	5/MCH	10.6	7300	48	46	6	_	4.1	4	8	10.6	7800	60	36	4	_	4.1	4	8
31	C13405	3/MCH	11.2	8700	62	36	2	_	4.2	4	8	11.2	8800	64	36	2	_	4.2	4	8
32	B47188	3/MCH	9.6	7700	56	41	3	_	3.1	6	12	9.6	7900	67	30	3	_	3.1	4	8
33	789	2/FCH	8.7	8700	50	46	4	_	4	2	4	8.7	9800	68	30	2	_	4	2	4
34	820	3/MCH	10.2	9500	60	36	4	_	4	12	24	10.2	9200	61	37	2	_	4	4	8
35	825	4/MCH	9.1	10100	62	34	4	_	3.3	4	8	9.1	9700	62	36	2	_	3.3	4	8
36	878	2/MCH	8.8	7200	51	48	1	_	3.2	10	20	8.8	7800	58	41	1	_	3.2	4	12
37	877	3/FCH	9.7	9800	61	37	2	_	3.9	8	16	9.7	9100	66	32	2	_	3.9	4	8
38	880	3/FCH	9.1	10100	62	34	4	_	3.3	12	24	9.1	9700	62	36	2	_	3.3	4	12
39	879	2/FCH	10.1	9900	58	36	4	-	4.1	12	20	10.1	9500	60	38	2	-	4.1	4	12
40	890	2/MCH	9.7	9700	62	35	3	-	3.9	8	12	9.7	9500	65	33	2	-	3.9	2	4

Hb- Haemoglobin, Tc- Total WBC, Dc- Differential Count , TRBC- Total RBC, P-Polymorphs, L-Lymphocytes, E-Esonophil, M-Monocytes.

S/ NO	OP/ IP NO	A/S	Before Treatment(OPD)									After Treatment(OPD)							
			peri smear		CRP	Widal	Bili	SGOT	SGPT	Urea	Creati	peri smear		CRP	Widal	Bili	SGOT	SGPT	Urea	Creatin
			MP	MF			T-mg%	uiu/ml		gms %	mgs%	MP	MF			T.mg %	uiu/ml		gms%	mgs%
1	C8915	4/FCH	NIL	Neg	Posi	Neg	0.7	49	28	15	0.6	NIL	Neg	Neg	Neg	0.6	40	26	15	0.5
2	B40042	4/MCH	NIL	Neg	Posi	Neg	0.7	18	30	18	0.6	NIL	Neg	Neg	Neg	0.6	17	32	18	0.6
3	C10060	4/MCH	NIL	Neg	Neg	Neg	0.8	30	25	15	0.6	NIL	Neg	Neg	Neg	0.5	30	25	15	0.5
4	C13367	3/MCH	NIL	Neg	Neg	Neg	0.6	18	28	23	0.6	NIL	Neg	Neg	Neg	0.4	18	27	23	0.4
5	C830	2/MCH	NIL	Neg	Neg	Neg	0.6	22	32	18	0.5	NIL	Neg	Neg	Neg	0.6	20	30	18	0.5
6	C17751	4/MCH	NIL	Neg	Posi	Neg	0.6	20	32	14	0.5	NIL	Neg	Neg	Neg	0.5	19	32	14	0.5
7	C21875	4/MCH	NIL	Neg	Posi	Neg	0.6	19	28	20	0.4	NIL	Neg	Neg	Neg	0.5	19	27	20	0.4
8	C22898	2/MCH	NIL	Neg	Neg	Neg	0.7	29	27	22	0.6	NIL	Neg	Neg	Neg	0.5	28	26	22	0.6
9	C12072	2/MCH	NIL	Neg	Neg	Neg	0.7	30	34	21	0.6	NIL	Neg	Neg	Neg	0.4	30	33	21	0.5
10	C23082	2/MCH	NIL	Neg	Posi	Neg	0.6	28	28	18	0.5	NIL	Neg	Neg	Neg	0.4	27	27	18	0.5
11	C21688	4/MCH	NIL	Neg	Neg	Neg	0.6	22	26	14	0.5	NIL	Neg	Neg	Neg	0.6	22	24	14	0.5
12	C13367	3/MCH	NIL	Neg	Neg	Neg	0.6	34	40	22	0.4	NIL	Neg	Neg	Neg	0.6	30	38	22	0.4
13	B97495	4/MCH	NIL	Neg	Neg	Neg	0.6	22	20	24	0.4	NIL	Neg	Neg	Neg	0.5	22	18	24	0.4
14	B86818	4/MCH	NIL	Neg	Posi	Neg	0.7	31	32	16	0.6	NIL	Neg	Neg	Neg	0.5	30	30	16	0.5
15	C25362	3/FCH	NIL	Neg	Posi	Neg	0.4	26	20	18	0.6	NIL	Neg	Neg	Neg	0.4	25	18	18	0.6
16	C16052	3/MCH	NIL	Neg	Neg	Neg	0.6	30	24	24	0.6	NIL	Neg	Neg	Neg	0.6	30	22	24	0.6
17	C9737	4/MCH	NIL	Neg	Neg	Neg	0.6	29	22	17	0.5	NIL	Neg	Neg	Neg	0.6	28	20	17	0.5
18	C26967	4/MCH	NIL	Neg	Posi	Neg	0.8	19	23	20	0.4	NIL	Neg	Neg	Neg	0.5	19	19	20	0.4
19	C25776	3/FCH	NIL	Neg	Posi	Neg	0.8	17	29	23	0.6	NIL	Neg	Neg	Neg	0.6	16	29	23	0.4
20	B76749	4/MCH	NIL	Neg	Neg	Neg	0.7	30	30	16	0.5	NIL	Neg	Neg	Neg	0.6	28	30	16	0.5

S/ NO	OP/ IP NO	A/S	Before Treatment(OPD)									After Treatment(OPD)							
			peri smear		CRP	Widal	Bili	SGOT	SGPT	Urea	Creati	peri smear		CRP	Widal	Bili	SGOT	SGPT	Urea	Creatin
			MP	MF			T-mg%	uiu/ml		gms %	mgs%	MP	MF			T.mg %	uiu/ml		gms%	mgs%
21	C27217	4/MCH	NIL	Neg	Neg	Neg	0.6	25	29	24	0.5	NIL	Neg	Neg	Neg	0.6	23	28	24	0.5
22	C27181	2/MCH	NIL	Neg	Neg	Neg	0.7	22	23	14	0.5	NIL	Neg	Neg	Neg	0.5	20	22	14	0.5
23	c25432	2/MCH	NIL	Neg	Posi	Neg	0.5	34	35	20	0.4	NIL	Neg	Neg	Neg	0.4	32	34	20	0.4
24	B60287	3/MCH	NIL	Neg	Neg	Neg	0.7	18	24	16	0.4	NIL	Neg	Neg	Neg	0.6	18	22	16	0.4
25	C19844	3 FCH	NIL	Neg	Neg	Neg	0.7	24	31	18	0.6	NIL	Neg	Neg	Neg	0.5	22	31	18	0.6
26	A33878	3/FCH	NIL	Neg	Posi	Neg	0.8	23	28	24	0.6	NIL	Neg	Neg	Neg	0.6	22	26	24	0.5
27	C29298	2/MCH	NIL	Neg	Posi	Neg	0.6	30	32	23	0.5	NIL	Neg	Neg	Neg	0.6	30	30	23	0.5
28	C14327	2/FCH	NIL	Neg	Posi	Neg	0.5	14	30	19	0.5	NIL	Neg	Neg	Neg	0.5	14	29	19	0.5
29	C9737	4/FCH	NIL	Neg	Neg	Neg	0.5	32	22	23	0.4	NIL	Neg	Neg	Neg	0.4	30	19	23	0.4
30	B93945	5/MCH	NIL	Neg	Neg	Neg	0.7	26	18	25	0.6	NIL	Neg	Neg	Neg	0.6	24	17	25	0.6
31	C13405	3/MCH	NIL	Neg	Neg	Neg	0.7	32	30	19	0.6	NIL	Neg	Neg	Neg	0.5	30	30	19	0.5
32	B47188	3/MCH	NIL	Neg	Posi	Neg	0.7	25	26	21	0.5	NIL	Neg	Neg	Neg	0.5	25	25	21	0.5
33	789	4/MCH	NIL	Neg	Posi	Neg	0.7	27	24	23	0.6	NIL	Neg	Neg	Neg	0.4	26	22	23	0.6
34	820	6/MCH	NIL	Neg	Neg	Neg	0.6	30	34	25	0.6	NIL	Neg	Neg	Neg	0.6	28	34	25	0.6
35	825	4/FCH	NIL	Neg	Posi	Neg	0.6	32	22	21	0.6	NIL	Neg	Neg	Neg	0.6	30	18	21	0.6
36	878	2/MCH	NIL	Neg	Posi	Neg	0.6	27	26	18	0.5	NIL	Neg	Neg	Neg	0.5	26	24	18	0.4
37	877	3/FCH	NIL	Neg	Posi	Neg	0.5	26	24	19	0.4	NIL	Neg	Neg	Neg	0.5	26	23	19	0.4
38	880	4/FCH	NIL	Neg	Posi	Neg	0.4	33	30	17	0.6	NIL	Neg	Neg	Neg	0.4	30	30	17	0.6
39	879	2FCH	NIL	Neg	Posi	Neg	0.5	27	18	16	0.5	NIL	Neg	Neg	Neg	0.4	26	14	16	0.5
40	890	2MCH	NIL	Neg	Posi	Neg	0.6	24	34	22	0.6	NIL	Neg	Neg	Neg	0.6	22	32	22	0.5

ANNEXURE

Protocol

Proforma

Preparation of trail drug

Bio chemical analysis of trail drug

Pharmacological analysis of trail drug

Bibliography

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

69, Anna Salai, Guindy, Chennai - 32.

DEPARTMENT OF SIDDHA

CERTIFICATE OF PARTICIPATION

This is to certify that Dr. .....R. SUGUNA.....

has participated as ~~Resource Person~~/ Delegate in the Workshop on

"Research Methodology & Biostatistics" for AYUSH Post Graduates &

Researchers organized by the Dept. of Siddha from 04-07-2011 to 08-07-2011

Dr. N. Kabilan
Prof. & Head

Dr. Sudha Seshayyan
Registrar i/c

Dr. Mayil Vahanan Natarajan
Vice-Chancellor

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F.No.NIS/6-20/Res/IEC/10-11 Date : 29.11.10

Ethical Committee Clearance Certificate

We, the Undersigned Chairman/Member Secretary of the Ethical Committee, functioning in National Institute of Siddha have studied the proposed dissertation Project of ....Dr. R. Suguna (Reg.no.: 32092008) II year Dept. of Kuzhandhai Maruthuvam entitled ....Study on "Kaba Sura Kudineer" for Kabasuram...

....

applying for provisional registration as a part of M.D(S) course and hereby give the certificate of clearance of approval by this Ethical Committee.

Station: Chennai-47
Date: 29-11-2010

(Dr.K.Manickavasakam)
Member Secretary

(Dr. V. Subramanian)
Chairman of IEC

PROTOCOL

TITLE:

An Open Clinical Study to Evaluate the Safety and Efficacy of Sasthric Siddha Formulation Kabasura Kudineer for the Management of Kabasuram.

BACKGROUND:

As per the siddha literature, Kabasuram is the one of the major type of fever which is commonly affecting in pediatric population and it has characterized by fever, dry or productive type of cough, dyspnoea, wheezing, head ache, constipation, fatigue, chest pain and running nose[1].

Kabasuram may be resemblance with acute bronchitis and it has been defined in medical scientific literature as one or more bronchi inflammation. Symptoms of Kabasuram may be also due to the inflammation and it can be bronchial involvement. Acute bronchitis affects the children in their active period of life and it is prevalent throughout the world and is one of the top five reasons for childhood physician visits in countries that track such data. Siddha system of medicine have been practicing in India from the origin of mankind and it is the crown all traditional systems of medicine in the world.

Siddha literature having more number of efficacious medicines for Kabasuram, even though there are more number of research findings have been published for the above ailment but not yet have scientifically validated drugs available for the Kabasuram. Hence we have chosen the authenticated sasthric siddha poly herbal formulation namely Kabasura Kudineer (KBS) for the management of Kabasuram, which is prescribing to the patients since more than years together. But not yet proved and clinically documented properly.

One of the ingredients of my trial drug, *Piper longum Linn* have anti inflammatory properties. *Justicia Adathoda* have anti inflammatory property, *Solanum Trilobatum* have anti inflammatory activity, All ingredients of experimental drugs showing strong scientific peer reviewed journal literature evidence.

2. OBJECTIVES:

Primary:

To evaluate the safety and efficacy of the experimental drug for the management of Kabasuram

Secondary:

To study the factors associated with patients of KABASURAM

3. MATERIALS & METHODS:

a) Study Design And Conduct Of The Study

This is the open clinical observational study. No blinding. Eligible children with Kabasuram i.e. who are fulfill the inclusion criteria for this study would be enrolled and strictly follow the ASU clinical research guidelines.

b) Population And Sample

40 children affecting with Kabasuram would be enrolled for the study.

c) Treatment

Kabasura kudineer (KBS) raw materials would be purchased from the market and necessary drugs would be collected from the natural source and authenticated by the Dept of Gunapadam in NIS and the formulation would be prepared according to the siddha literature mentioned. KBS powder would be distributed to the parents/ guardians of the children and label will show extensive details about the usage of the drug and also demonstrated practically. Dosages of the experimental drug have been calculated as per the siddha text. Drug would be stored in the airtight sterile container and distributed in the same. Duration of the treatment period for only 3 days and according to the patient requirement might be prolonged.

Dosage:

2 to 5 years – 15ml [bid]

6 to 12 years – 30ml [bid]

d) Subject Selection Criterias

Inclusion Criteria:

a) Age 1 to 12 years

b) Patients, who are having classical symptoms like Fever, Wheezing, Dry or productive cough, Chest pain, Head ache, Constipation, Running nose, Fatigue, Polyarthralgia.

c) Willing to give specimen of blood for investigation when required.

d) Willing to attend the OPD on fourth day of treatment.

Exclusion Criteria:

a) Patients is not eligible for admission to the trail if any following is applicable Convulsions, Jaundice, Typhoid, Malaria, Active primary complex, Pneumonia, Rheumatic fever,

b) Patient not willing to give biological sample whenever required.

c) Patient not willing to give consent for the study

Withdrawl Criteria:

a) Exacerbation of symptoms

b) Occurrence of any adverse effect such as diarrhea, abdominal discomfort.

c) Patient turned to unwilling during the course of trial drug.

e) Methods would be followed During the Course of Study:

- The suspected patients will be examined clinically and screened using screening form.
- If they met all inclusion criteria and not meeting any exclusion criteria, the patients will be enrolled for this study.

- The patients who are to be enrolled would be informed about the study, trial drug, possible outcomes and the objectives of the study in the language and terms understand able to the patients and informants.
- After ascertaining the informant's willingness, informed consent would be obtained in writing from them in the consent form.
- These patients will be given unique registration number.
- Screening form will be filled up. History proforma

  Clinical assessment and Laboratory investigations will be used for recording the patient's history, clinical examination of signs and symptoms and lab investigations respectively.
- Patients would be advised to take the trial drug and appropriate dietary advice would be given according to the patient's and informants perfect understanding.

f) Assessment and tests

clinical Assessment

- Fever
- Cough with or without expectoration
- Breathlessness
- Wheezing, Arthralgia
- Fatigue
- Constipation
- Head ache

Siddha Method Of Assessment

- Poriyal arithal
- Pulanal arithal
- Vinathal
- Uyirthathukkal

- Udal thathukkal
- Envagai thervugal

Laboratory Investigation:

- Blood Test – TC, DC, ESR, HB, Widal, CRP peripheral smear for MP, peripheral smear for MF,
- Urine Test – Albumin, Sugar, Deposit, BS, BP, Urobilinogen
- Serum: Urea and Creatinine
- Serum: SGOT, SGPT

They will be asked to attend the OPD on the 4th day and also they will be instructed to bring back. Unconsumed trials drugs and return them during their next visit. For IPD patients, the trial drug will be given daily.

f) Data Management

a. After enrolling the patient in the study, a separate file for each patient will be opened and all forms will be filed in the file. Whenever study patient visits OPD during the study period, the respective patient file will be taken and necessary recordings will be made at the assessment form or other suitable form.

- The screening forms will be filled separately.
- The Data recordings will be monitored for completion and adverse event by HOD and data logical recording and completeness will be monitored by statistician (Sr. Research Officer (Statistics)). All forms will be further scrutinized in presence of Investigators by Sr. Research Officer (Statistics) for logical errors and incompleteness of data before entering onto computer to avoid any bias. No modification in the results is permitted for unbiased report.
- Any missed data found in during the study, it will be collected from the patient, but the time related data will not be recorded retrospectively

- All collected data will be entered using MS access software onto computer.
- Investigators will be trained to enter the patient data and cross checked by SRO

g) Results Observational Grading

G1: Complete clearance of all symptoms of Kabasuram

G2: Reduced symptoms of Kabasuram

G3: All symptoms of Kabasuram will be persistent

h) AE / SAE Management

If the patient is found to have any AE/ SAE that would be immediately informed to IEC and also will treat for the untoward reactions.

i) Data Collection Forms

- Screening and selection Proforma
- Consent form
- History Proforma on enrollment
- Laboratory investigation on enrollment
- Clinical Assessment for during and after treatment assessment
- Withdrawal form
- Adverse reaction form
- Drug compliance form
- Diet Advice form

j) Statistical Analysis

Changes in subjective parameters will be analyzed using paired X^2 – test and changes in objective parameters will be analyzed using paired t – test.

k) Ethical Issues

a. To prevent any infection, while collecting blood sample from the patient, only disposable syringe, disposable gloves, with proper sterilization of lab equipments will be used.

b. The formulation mentioned in the **Athma Ratcha Miratham Enum Vaithiya Sara Sangirakam** will only be used for the study.

c. No other external or internal medicines are used. There is no infringement on the right of patient.

d. The data collected from the patient will be kept confidentially. The patient will be informed about the disease and treatment.

e. After the consent of the patient (through patient consent form), he/she will be enrolled in the study.

f. Treatment would be provided free of cost.

g. In conditions of treatment failure, adverse reactions, patients will be given alternative treatment at the National Institute of Siddha with full care through the end.

h. The Director, H.O.D, SRO and Ethical members can monitor the patient profile at any time regarding the research.

Method of preparion of experimental drug kabasura kudineer:

Ingredients	Botanical Name	Weight
Adathodi root	adathoda vasica	1/16 Palam (2.2 gm)
Thuthuvelai root	solanum trilobatum	1/16 Palam (2.2 gm)
Kandangkathri root	solanum surattensse	1/16 Palam am (2.2 gm)
Sirukanchori root	tragia involucrate	1/16 Palam (2.2 gm)
Siruvaluthali root	solanum ind.	1/16 Palam (2.2 gm)
Chukku	Zingiber officinales	1/16 Palam (2.2 gm)
Katrazhi sarugu	aloe barberdensis	1/16 Palam (2.2 gm)
Impural	oldenlandia umbellate	1/16 Palam (2.2 gm)
Mutthakassu	cyperus rotandus	1/16 Palam (2.2 gm)

Source of Trial Medicine:

The required drugs for preparation of kabasura kudineer will be purchased from a well reputed country shop and it will be identify from gunapadam department of NIS. The drug is purified & prepared in gunapadam lab of National institute of siddha.

All the drugs are purified and grind into a coarse powder. Add to this 2 nazhi (2*1.3 lit) of water, boiled upto ¼ padi of it is original. And add thippli powder one varagan (4.1 gm) and honey into the decotion.

Dosage:

2 to 5 years – 15ml [bid]

6 to 12 years – 30ml [bid]

Thippili chooranam:

2 years- 520 mg

3 years- 650 mg

4 years- 975 mg

5 years to 7 years- 1.3 gm

8 years to 12 years- 2 gm

Indication:

Kabasuram.

PROFORMA

தேசிய சித்த மருத்துவ நிறுவனம்
அயோத்திதாச பண்டிதர் மருத்துவமனை, சென்னை-47.
பட்ட மேற்படிப்பு மருத்துவத்துறை.
கபசுர குடிநீரின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்வு.
ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கபட்டது

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

தேதி: கையொப்பம்:

இடம்: பெயர்:

நோயாளியின் பெற்றோர் ஒப்புதல் படிவம்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும், மருந்தின் தன்மை மற்றும் மருதுவ வழிமுறைப் பற்றியும், இந்த மருத்துவத்தை தொடர்ந்து எனது குழந்தையின் உடல் இயக்கத்தைக் கண்காணிக்கவும், அதனைப் 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 விடுவித்துக்கொள்ளும் உரிமையை தெரிந்துருக்கிறேன்.

நான் என்னுடைய சுதந்திரமாக தேர்வு செய்யும் உரிமையைக் கொண்டு கபசுர குடிநீரின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்வுக்கு எனது குழந்தையை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி: நோயாளியின் பெயர்:

இடம்: பெற்றோர் /பாதுகாவலர் பெயர்:

கையொப்பம்

தேதி: சாட்சிக்காரர் பெயர்:

இடம்: கையொப்பம்:

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Form IICONSENT FORM

CERTIFICATE BY INVESTIGATOR

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

Date…… Signature…….

Place…… Name……

CONSENT OF INFORMANT

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 body functions.

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

I am, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of "KABASURA KUDINEER" for the treatment of 'KABASURAM (ACUTE BRONCHITIS).

Signature……

Date: Name:……

Place: Relationship:…….

Signature of witness:

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Form II - SCREENING FORM

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

INCLUSION CRITERIA:	Yes	No
Fever	☐	☐
Cough	☐	☐
wheezing	☐	☐
Malaise	☐	☐
Arthralgia	☐	☐
Headache	☐	☐
Vomiting	☐	☐
Rigor	☐	☐
Lab Investigations-willing	☐	☐
EXCLUSION CRITERIA:		
Active primary complex	☐	☐
Pneumonia	☐	☐
Congenital Heart diseases	☐	☐
Convulsions	☐	☐

ADMITTED TO TRIAL: Yes ☐ No ☐

IF YES, SERIAL NUMBER: ☐☐

SIGNATURE OF INVESTIGATOR

DATE:

SIGNATURE OF LECTURER

PLACE:

SIGNATURE OF HOD

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FORM III – HISTORY

O.P /I.P No : Bed No: S. No: ☐☐☐

Name : _____ Age (Yr) : ☐☐

Gender : MC ☐ FC ☐

Father's Name :

Father's Occupation :

Monthly/Annual Income :

Religion :

Socio Economical Level :

Informant : Mother ☐ Father ☐ Guardian ☐ ----------

Postal Address :

Present illness and Duration:

History of present illness:

Past History:

Any Other:

Family History:

Any H/O of Hereditary/ Familial disease: Yes ☐ No ☐

If yes, details--------

Positive Familial H/O PT Yes ☐ No ☐

If yes, details_____

Immunization History:

Immunization done upto age: Yes ☐ No ☐

(According to national immunization schedule)

If not, Details_____

Any special vaccine given Hep.B ☐ HIB ☐ Typhoid ☐

Food Habits:

1. Veg ☐ 2. Non Veg ☐ 3.Mixed ☐

General examination:

Vital signs:

Pulse rate _____ /min

Heart rate: _____/min

Respiratory Rate_____

Temperature: _____Degree F

Height: _____cm

Weight: _____ kg

Clubbing: Present ☐ Absent ☐

Cyanosis: Present ☐ Absent ☐

Pallor: Present ☐ Absent ☐

Pedel Edema: Present ☐ Absent ☐

Clinical Assessment:

	YES	NO
Fever	☐	☐
Cough	☐	☐
Expectoration	☐	☐
Malaise	☐	☐
Arthralgia	☐	☐
Headache	☐	☐
Vomiting	☐	☐
Rigor	☐	☐

Other systems:	Normal	Affected
Cardio vascular system:	☐	☐
Gastro intestinal system:	☐	☐
Musculo skeletal system:	☐	☐
Central nervous system:	☐	☐
Endocrine system:	☐	☐

RESPIRATORY SYSTEM

a) **Inspection**:

Shape – : Normal ☐ Barrel-Shaped ☐ Pigeon ches ☐

Shoulder Drooping : Absent ☐ Present ☐

Intercostals spaces : Normal ☐ Bulge ☐ Introin ☐

Spine : Normal ☐ Kyphosis ☐ Scoliosis ☐

Supraclavicular fossae: Normal ☐ Flattening ☐ Hollowing ☐

Position of mediastinum:

Traile's sign: Present ☐ Absent ☐

Apical impulse--------

b) Palpation:

Tenderness Yes ☐ No ☐

If yes_____

Tactile vocal Fremitus: Normal and equal ☐

Increased ☐

Decreased ☐

C) **Percussion:**

Percussion on all over area: Normal ☐

Hyper resonance ☐

Dullness ☐

D) **Auscultation**:

Intensity of breath sounds: Normal/decreased/increased _____

Adventitious sounds

Wheeze ☐ Crepitations ☐ Rub ☐ None of above ☐

Vocal resonance: Normal/ Increased/ Decreased _____

Body constitution:

1. Vatham ☐ 2. Vatha pitham ☐ 3.VathaKabam ☐
4. Pitham ☐ 5. Pitha vatham ☐ 6.PithaKabam ☐
7. Kabam ☐ 8. Kaba vatham ☐ 9.Kabapitham ☐

Gunam:

Sathuvam ☐ Rasatham ☐ Thamasam ☐

Thinai: (living place)

1. Kurinji ☐ 2. Mullai ☐ 3.Marutham ☐
4. Neithel ☐ 5. Paalai ☐

Paruva kalam: (season)

1.Kaarkalam (Aavani. Puratasi) ☐ 2. Kuthir kalam (Ippasi, Karthikai) ☐

3.Munpanikaalam (Markazhi, Thai) ☐ 4. Pinpanikaalam (Massi, Punguni) ☐

5.Illavenirkaalam (Chithirai, Vigasi) ☐ 6. Muthuvenirkaalam (Aani,Adai) ☐

Pori/pulangal	**Normal**	**Affected**	**Normal**	**Affected**	
Mei	☐	☐	☐	☐	_____
Vaai	☐	☐	☐	☐	_____
Kan	☐	☐	☐	☐	_____
Mooku	☐	☐	☐	☐	_____
Sevi	☐	☐	☐	☐	_____

Kanmendhirium / kanmavidayam:

	Normal	Affected	Normal	Affected	
Kai	☐	☐	☐	☐	_____
Kaal	☐	☐	☐	☐	_____
Vaai	☐	☐	☐	☐	_____
Eruvai	☐	☐	☐	☐	_____
Karivai	☐	☐	☐	☐	_____

Uyir Thathukkal

Vatham :	**1. Normal**	**2. Affected**	
Pranam	☐	☐	_____
Abanam	☐	☐	_____
Viyanan	☐	☐	_____
Uthanan	☐	☐	_____
Samanan	☐	☐	_____
Nagan	☐	☐	_____
Koorman	☐	☐	_____
Kirukaran	☐	☐	_____
Devathathan	☐	☐	_____
Dhananjeyan	☐	☐	_____

Pitham	**1. Normal**	**2. Affected**	
Analagam	☐	☐	_____
Ranjagam	☐	☐	_____
Saathagam	☐	☐	_____
Alosagam	☐	☐	_____
Prasagam	☐	☐	_____

Kabam	**1. Normal**	**2. Affected**	
Avalambagam	☐	☐	_____
Kilethagam	☐	☐	_____
Pothagam	☐	☐	_____
Tharpagam	☐	☐	_____
Santhigam	☐	☐	_____

Udal Thathukkal	**Normal**	**Affected**	
Saaram	☐	☐	_____
Senneer	☐	☐	_____
Oon	☐	☐	_____
Kozhuppu	☐	☐	_____
Enbu	☐	☐	_____
Moolai	☐	☐	_____
Sukilam / Suronitham	☐	☐	_____

Envagai Thervu: (Eight Type Examinations)

Naa-

Niram ----------

Thanmai ----------

Suvai ----------

Niram-	☐	☐	_____
Mozhi	☐	☐	_____
Vizhi	☐	☐	_____
Sparisam	☐	☐	_____

Malam- Niram _____

Edi _____

Nurai _____

Irukal/ilagal ____

Murigal _____

Moothiram

Neerkuri: Niram _____ Neikuri:

Edai _____ 1.Vatham ☐ 2.Pitham ☐

Manam _____

Nurai _____ 3.Kabam ☐ 4.Thontham ☐

Enjal _____

Naddi:

Thani Nadi

Vadham ☐ pitham ☐ kabam ☐

Thontha Nadi

Vatha pitham ☐ Pitha vatham ☐ Pitha kabam ☐ Kaba pitham ☐

Thoda Nadi

Vatha kabam ☐ Kaba vatham ☐

Mukkutra Nadi ☐

Admitted to trial: 1. Yes ☐ 2. No ☐

If yes, S. No: 1.IP ☐ 2.OP ☐

Diagnosis:

DRUGS ISSUED : _____

Date : _____

Station : _____

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

Form IV - LABORATORY INVESTIGATIONS

ROUTINE BLOOD INVESTIGATIONS		NORMAL VALUES	BEFORE TMT	AFTER TMT
Hb (gms%)		11.5 – 14.5		
T.RBC (milli /cu.mm)		4-4.9		
ESR (mm)	½ hr.	6-12		
	1 hr.	0-13		
T.WBC (milli /cu.mm)		5000-14500		
DIFFERENTIAL COUNT (%)	Polymorphs	40-75		
	Lymphocytes	28-48		
	Monocytes	3-6		
	Eosinophils	0-3		
	Basophils	0-1		
Smear For M.P				
smear for M.F				
Widal				
Urea	25-40 mg/dl			
Creatinine	0.6-1mg/dl			
SGOT/ SGPT	0-40 mg/dl/ 0-35 mg/dl			
Total-Bilirubin	0.2-1.2 mg/dl			
CRP				

Urine Investigation	Before TMT	After TMT
Albumin		
Bile salt		
Bile pigments		
Deposits		

Date: Signature of Principal Investigator

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

Form V CLINICAL ASSESSMENT

S.NO	CLINICAL FEATURES (SIGNS AND SYMPTOMS)	DURING THE TREATMENT 1st day	AFTER THE TREATMENT 4th day
1.	FEVER		
2.	RIGOR		
3.	COUGH WITH EXPECTORATION		
4.	WHEEZING		
5.	HEADACHE		
6.	ARTHRALGIA		
7.	CONSTIPATION		
8.	MALAISE		

Date: Signature of principal investigator

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

Form VI - 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
Pt not willing to continue	: Yes/ No

Date: signature of principal investigator

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Form VII – ADVERSE REACTION

1. S.l. 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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Form VIII – DRUG COMPLIANCE

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

NAME OF THE DRUG: KABASURA KUDINEERCHOORANAM.

FORM OF THE DRUG: POWDER

ADMINISTRATION & ADJUVANT: PER ORAL, IN HONEY

DOSE & DURATION: 20 gm, TWICE DAILY FOR 3 DAYS

NO. OF DRUG PACKETS GIVEN: _____

NO. OF DRUG PACKETS RETURNED: _____

DAY	**DATE OF DRUG INTAKE**	**MORNING**	**EVENING**
DAY 1			
DAY2			
DAY 3			
DAY 4			

Date: Signature of principal investigator

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Form VIII – DIET FORM

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

உணவு பத்திய முறைகள்

- பாலில் மிளகுத்தூள், மஞ்சள் தூள், பனங்கற்கண்டு கலந்து குடிக்கவும்.
- துளசிச் சாறில் தேன் கலந்து கொடுக்கவும்.
- சூப் வகைகள் கொடுக்கவும்.
- தூதுவேளை ரசம், துவையல் தரவும்.
- குளிர்ச்சியான, இனிப்பு பொருட்களை தவிர்க்கவும்.
- புகை, தூசி, பனிகாற்றில் நடமாடுவதை தவிர்க்கவும்.

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 600047

CERTIFICATE OF BOTANICAL AUTHENTICITY

Certified that the following plant drugs used in the Siddha formulation **Kabasura kudineer** (Internal) for the management of **Kabasuram** taken up for Post Graduation Dissertation studies by **Dr.R.Suguna**, M.D.(S), II year, Kuzhanthai Maruthuvam, are correctly identified and authenticated through Visual inspection / Organoleptic characters / Experience, Education & Training/ Morphology / Micromorphology / Microscopica/ Taxonomical methods.

Adhatoda zeylanica Medic. (Acanthaceae), Root
Solanum trilobatum Linn. (Solanaceae), Root
Solanum surattense, Burm.f (Solanaceae), Root
Solanum indicum Linn. (Solanaceae), Root
Cyperus rotundus Linn. (Cyperaceae), Tuber
Zingiber officinale Rosc. (Zingiberaceae), Rhizome
Piper longum Linn. (Piperaceae), Fruit
Tragia involucrata Linn. (Euphorbiaceae), Root
Aloe barbadensis Mill. (Liliaceae), Leaf
Hedyotis umbelata (Linn.) Lamk. (Rubiaceae), Whole plant

Authorized Signature with seal:

7/3/11

Dr. D. ARAVIND,
M.D.(S),M.Sc.,Medicinal Plants
Asst. Professor in Botany,Pharmacognosy
Dept. of Medicinal Botany,
NATIONAL INSTITUTE OF SIDDHA
(DEPT. OF AYUSH, GOVT. OF INDIA)
Tambaram, Chennai-600 047.

PREPARATION OF TRAIL DRUG- KABASURA KUDINEER

INGREDIENTS:

Adathodi root (adathoda vasica)

Thuthuvelai root (solanum trilobatum)

kandangkathri root (solanum surattensse)

sirukanchori root (tragia involucrate)

siruvaluthali root (solanum ind)

Chukku (zingiber officinales)

Katrazhi sarugu (aloe barberdensis)

Impural (oldenlandia umbellate)

Mutthakassu (cyperus rotandus) Each 1/16 Palam(2.2 gm)

சுத்தி முறைகள்:

வேர்களின் பொதுவான சுத்தி:

எந்த வகையான வேராக இருந்தாலும், அதை பசும்பாலில் வேக வைத்து சுத்தமான தண்ணீரில் கழுவி எடுத்து ரவியில் அல்லது நிழலில் உலர்த்திட வேண்டும்.

- சித்த பிரணவ சூத்திர மூப்பு

முத்தக்காசு: மேல் தோல் போக்கி, சிறுக உடைத்து ரவியில் உலர்த்த சுத்தியாகும்.

- சித்த பிரணவ சூத்திர மூப்பு

சுக்கு: மேல் தோல் போக்கி, சுண்ணாம்பூ பூசி ரவியில் உலர்த்த சுத்தியாகும்.

- சித்த பிரணவ சூத்திர மூப்பு

திப்பிலி: கொடிவேலி சாறு, வெள்ளாட்டு நீர், காடி, பழச்சாறு இவற்றில் ஏதேனும் ஒன்றில் 3 மணி நேரம் ஊர வைத்து எடுத்து உலர்த்தி இளவறுப்பாக வறுத்துக் கொள்ள வேண்டும்.

- சித்த பிரணவ சூத்திர மூப்பு

தேன் : சுட வைத்துக் கொள்ளவும்.

- மருத்துவத் திறவுகோல்

SOURCE OF TRIAL MEDICINE:

The required drugs for preparation of kabasura kudineer will be purchased from a well reputed country shop and it will be identify from gunapadam department of NIS. The drug is purified & prepared in gunapadam lab of National institute of siddha.

PREPARATION:

All the drugs are purified and grind into a coarse powder. Add to this 2 nazhi (2*1.3 lit) of water, boiled upto ¼ padi of it is original. And add thippli powder one varagan (4.1 gm) and honey into the decotion.

DOSAGE:

2 to 5 years – 15ml [bid]

6 to 12 years – 30ml [bid]

Thippili chooranam:

2 years- 520 mg

3 years- 650 mg

4 years- 975 mg

5 years to 7 years- 1.3 gm

8 years to 12 years- 2 gm

INDICATION:

Kabasuram

REFERENCE:

Athma Ratcha Mirtham Enum Vaithya Sara Sangirakam, page no: 205

சிறுகாஞ்சொறி- *Tragia involcrata*

ஆடாதோடை- *Justicia adathoda*

சிறுவழுதுனை- *Solanum indicum*

இம்பூரல்- *Hedyotis umbellata*

கற்றாழஞ்சருகு - *Aloe barbadensis*

சுக்கு- *Zingiber officinale*

தூதுவளை- Solanum trilobatum

திப்பிலி - Piper longum

முத்தக்காசு – Cyperus rotandus

Kabasura Kudineer Chooranum

c

KUDINEER

இயல்பு:

உலர்ந்த சரக்குகளையாவது, ஈரமாயுள்ள இலைகளையாவது இடித்து, அதற்குச் சொல்லப்பட்டுள்ள அளவின்படி தண்ணீர் விட்டு இரண்டுக் கொன்றாகவாது, நான்குக்கொன்றாகவாது, ஆறுக்கொன்றாகவாது, இருபத்துநான்குக்கு ஒன்றாகவாது, காய்ச்சி வடிகட்டி எடுத்துக் கொவதாகும்.

- குணபாடம் தாது சீவ வகுப்பு

கஷாய பாண்ட இலக்கணம்:

மட்கலமே சிறப்பு உடையது.

- சிகிச்சாரத்ன தீபம் என்னும் வைத்திய நூல்.

மறுபாக குணம்:

"மாகமொட்டிக் குளீர்ந்த பாண சாயனரல்
வேக விவேக குடிநீர் மெச்சுரச - மேகுமிரா
மீந்த வெஞ்சனாதிகளை மீளவொரு காவானடி
மாந்த நெஞ்சம் வேறிருக்குமா."

ஆறின வெந்நீர், இரசாயனம், இளகம், குடிநீர், சாறு, முன் இரவு மீந்த உணவு என்ப்வற்றை அடுப்பில் வைத்து மீண்டும் பதத்தில் எரித்து உண்ண நஞ்சாகும்.

- அகத்தியர் அட்டவணை வாகடம்

சீரண காலம்: 3 நாழிகை

- அகத்தியர் அட்டவணை வாகடம்

ஆயுட்காலம்:

“உள்மருந் துசுரசஞ் சாறுகுடி நீர்கற்க
முக்களியடை யோர்சாமம்
உயர்சூரணம்பிட்டு வடகம் வெண் ணெய்நான்கி
னூயிர்மூன்று திங்களாகும்”.

SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY
INDIAN INSTITUTE OF TECHNOLOGY, MADRAS
Chennai - 600 036. INDIA

CERTIFICATE

Certified that herbal/mineral drug **Kabasura Kudineer Chooranum** formulated by **Dr.R.Suguna** III Year M.D(s) Department of Kuzhanthai Maruththuvam, National Institute of Siddha, Tambaram Chennai-47, were analysed (qualitative/quantitative) by, ICP Method at SAIF, IITM, Chennai-36, during November 2011.

Dr. R. MURUGESAN
Scientific Officer Gr.-I
Sophisticated Analytical Instrument Facility
Indian Institute of Technology, Madras
Chennai-600 036

Phone : 91-44-2257 4935 Fax : 91-44-2257 0545, 2257 0509
e-mail : saif@iitm.ac.in http://www.saif.iitm.ac.in

BIO -CHEMICAL ANALYSIS OF KABASURA KUDINEER

The Bio-chemical analysis of kabasura kudineer was carried out in Bio-chemistry lab,NIS, Chennai-47.

S. No	EXPERIMENT	OBSERVATION	INFERENCE
1.	Appearance of sample	Light green in colour	
2.	**Solubility:** a. A little(500mg) of the sample was shaken well with distilled water. b. A little(500mg) of the sample was shaken well with Con. H_2So_4	Sparingly soluble Completely soluble	Absence of Silicate
3.	**Action of Heat :** A small amount (500mg) of the sample was taken in a dry test tube and heated gently at first and then strong.	White fumes evolved	Presence of Carbonate
4.	**Flame Test :** A small amount (500mg) of the sample was made into a paste with con. Hcl in a watch glass and introduced into non-luminous part of the Bunsen flame.	No Bluish green flame appeared.	Absence of Copper
5.	**Ash Test :** A filter paper was soaked into a mixture of sample and dil. cobalt nitrate solution and introduced into the Bunsen flame and ignited	No Yellow colour flame appeared.	Absence of sodium

Preparation of Extract:

5gm of kabasura kudineer choornam was weighed accurately and placed in a 250ml clean beaker and added with 50ml of distilled water. Then it was boiled well for about 10 minutes. Then it was cooled and filtered in a 100ml volumetric flask and made up to 100ml with distilled water.

S. No	EXPERIMENT	Observation	Inference
	I. Test For Acid Radicals		
1.	**Test For Sulphate:** a. 2ml of the above prepared extract was taken in a test tube to this add 2ml of 4% dil. ammonium oxalate solution b. 2ml of the above prepared extracts was added with 2ml of dil-Hcl until the effervescence ceases off. Then 2ml of dil.Barium chloride solution is added.	No Cloudy appearance	Absence of Sulphate
2.	**Test For Chloride:** 2ml of the above prepared extract was added with dil. HNO_3 till the effervescence ceases. Then 2ml of dil.silver nitrate solution was added.	No cloudy appearance	Absence of Chloride
3.	**Test For Phosphate :** 2ml of the extract was treated with 2ml of dil.ammonium molybdate solution and 2ml of con.HNO_3	Yellow appearance	Presence of Phosphate
4.	**Test For Carbonate:** 2ml of the extract was treated with 2ml dil. magnesium sulphate solution	Cloudy appearance present	presence of carbonate
5.	**Test For Nitrate:** 1gm of the substance was heated with copper turning and concentrated H_2SO_4 and viewed the test tube vertically down.	No Brown gas was evolved	Absence of Nitrate
6.	**Test For Sulphide:** 1gm of the substance was treated with 2ml of con. Hcl	No Rotten Egg Smelling gas evolved	Absence of Sulphide
7.	**Test For Fluoride & Oxalate:** 2ml of extract was added with 2ml of dil. Acetic acid and 2ml dil.calcium chloride solution and heated.	Cloudy appearance present	Presence of fluoride and oxalate
8.	**Test For Nitrite:** 3 drops of the extract was placed on a filter paper, on that-2 drops of dil.acetic acid and 2 drops of dil.Benzidine solution is placed**.**	No Characteristic changes	Absence of Nitrite
9.	**Test For Borate:** 2 Pinches(50mg) of the substance was made into paste by using dil.sulphuric acid and alcohol (95%) and introduced into the blue flame.	Bluish green colour flame not appeared	Absence of borate

II. Test For Basic Radicals			
1.	**Test For Lead :** 2ml of the extract, was added with 2ml of dil.potassium iodine solution.	No Yellow colour Precipitation	Absence of Lead
2.	**Test For Copper:** a. One pinch (50mg) of substance was made into paste with con. Hcl in a watch glass and introduced into the non-luminuous part of the flame.	No Blue colour flame No Blue colour precipitation formed.	Absence of copper
3.	**Test For Aluminium:** To the 2ml of extract, dil.sodium hydroxide was added in 5 drops to excess.	No Yellow colour appearance	Absence of aluminium
4.	**Test For Iron:** a. To the 2ml of extrac,t add 2ml of dil.ammonium solution b. To the 2ml of extract 2ml thiocyanate solution and 2ml of con HNO_3 was added	Red colour appeared	Presence of Iron
5.	**Test For Zinc:** To 2ml of the extract, dil.sodium hydroxide solution was added in 5 drops to excess and dil.ammonium chloride was added.	White precipitation was not formed	Absence of Zinc
6.	**Test For Calcium:** 2ml of the extract, was added with 2ml of 4% dil.ammonium oxalate solution	Cloudy appearance and white precipitate was obtained	Presence of Calcium
7.	**Test For Magnesium:** To 2ml of extract, dil.sodium hydroxide solution was added in drops to excess.	White precipitate was not obtained	Absence of Magnesium
8.	**Test For Ammonium:** To 2ml of extract, 1 ml of Nessler's reagent and excess of dil.sodium hydroxide solution were added.	No Brown colour appeared	Absence of ammonium
9.	**Test For Potassium:** A pinch(25mg) of substance 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.	No Yellowish precipitation.	Absence of Potassium
10.	**Test For Sodium**: 2 pinches(50mg) of the substance was made into paste by using HCl and introduced into the blue flame of Bunsen burner.	No yellow colour flame	Absence of sodium
11.	**Test For Mercury**: 2ml of the extract was treated with 2ml of dil.sodium hydroxide solution.	No yellow precipitation	Absence of mercury
12.	**Test For Arsenic:** 2ml of the extract was treated with 2ml of dil.sodium hydroxide solution.	No brownish red precipitation	Absence of arsenic

III. Miscellaneous			
1.	**Test For Starch:** 2ml of extract was treated with weak dil.iodine solution	Blue colour was not developed	Absence of starch
2.	**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 boiled it for 2 minutes. The colour changes were noted.	Brick red colour not developed	Absence of reducing sugar
3.	**Test For The Alkaloids:** a) 2ml of the extract was treated with 2ml of dil.potassium lodide 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.	No colour developed	Absence of Alkaloid
4.	**Test For Tannic Acid:** 2ml of extract was treated with 2ml of dil.ferric chloride solution	No Black precipitate was obtained	Absence of Tannic acid
5.	**Test For Unsaturated Compound:** To the 2ml of extract 2ml of dil.Potassium permanganate solution was added.	Potassium permanganate was not decolourised	Absence of unsaturated compound
6.	**Test For Amino Acid :** 2 drops of the extract was placed on a filter paper and dried well. 20ml of Biurette reagent was added.	No Violet colour developed	Absence of amino acids

QUANTITATIVE ANALYSIS – KABASURA KUDINEER

PERKIN ELMER OPTIMA 5300DV ICP-OES

S.NO	PARAMETERS	RESULTS
1.	Aresenic	BDL
2.	Calcium	55.154mg/L
3.	Cadmium	BDL
4.	Mercury	BDL
5.	Iron	1.235mg/L
6.	Potassium	86.652mg/L
7.	Magnesium	15.239mg/L
8.	Sodium	80.387mg/L
9.	Phosphorus	42.142mg/L
10.	Lead	BDL
11.	Sulphur	1.548mg/L

BDL = Below Detection Limit

C.L. Baid Metha Foundation
for Pharmaceutical Education & Research
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E-mail : clbmfper@rediffmail.com

Harish L. Metha
Secretary & Correspondent

Prof. Dr. S. Venkataraman
Director

CERTIFICATE

This is to certify that

Dr.R.Suguna, MD (Siddha)

Kuzhandhai Maruthuvam,Final year

National Institute of Siddha,

Chennai - 600047

has undertaken the animal experimentation study titled

Preclinical pharmacological & Toxicological studies of

Kabasura kudineer(KK)for Analgesic, Antiinflammatory,Antipyretic and Anti

histaminic effects in experimental animals

in *our organization during the period Sept, 2011 to December - 2011, as part of the M.D(Siddha) dissertation in the branch Kuzhandhai Maruthuvam of TN Dr.MGR Medical University under my supervision and guidance.*

Place : Chennai
Date : 27.12.2011

Prof.Dr.S.Venkataraman
Director

PHARMACOLOGICAL STUDIES

ANTI – PYRETIC STUDY OF KABASURA KUDINEER

Aim

To study the anti pyretic activity of Kabasura kudineer.

Procedure

Group of six albino rats were selected and divided equally into 3 groups. All the rats were made hyperthermic by subcutaneous injection of 12% suspension of yeast at a dose of 1ml/ 100 gm of body weight. 10 hours later one group of animals was given the test drug by gastric tube at a dose of 250mg/ml and the second group received only distilled water at a dose of 2ml. Third group received standard drug paracetomol 20mg/ ml. Then mean rectal temperature for the 3 group were recorded at 0 hour, 1 ½ hour, 3 hours and 4 ½ hours after the drug administration. The difference between the mean temperature of the control group and that of the other groups was measured.

Antipyretic activity of (KK) using Digital Rectal Thermometer

Groups	**Rectal temperature (^{0}C)**				
	0 min	**30 min**	**60 min**	**120 min**	**240 min**
Control	35.90±1.18	37.23±1.24	38.27±0.34	37.20±1.08	36.46±0.88
Testdug KK	35.50±0.65	37.01±0.90	36.29±0.72**	35.43±0.388*	35.04±0.51*
Standard (Dic. Sodium 5mg/kg/po)	35.80±0.97	36.96±0.95	35.87±0.65***	35.65±0.60*	35.42±0.52*

n=6; Values are expressed as mean ± S.D followed by student

Paired T- test.

ns - Non significant as compared with control;

P< 0.001 (***) as compared with control.

Inference: Kabasura kudineer has significant Antipyretic action.

ANALGESIC STUDY ON KABASURA KUDINEER TAILFLICK METHOD IN ALBINO RATS.

Aim : To study the analgesic effect of Kabasura kudineer

Preparation of the test drug

1 gm of Kabasura kudineer was dissolved in 100 ml honey. Separately a dose of 2ml was given to each rat. This 2ml contains 200mg of the test drug.

Instruments

Analgesic meter (or) Dolori meter using heated michrome wire as the source of stimulus.

Procedure

Three groups of healthy albino rats of both sexes were selected, each group having 3 rats. Each rat was put inside a rat holder with the tail projecting out fully. The tip of the tail was kept over the michrome wire of the analgesic meter without touching it.

Now the current of 5 MA was passed through the analgesic meter to heat the microme wire by switching it on, at the sometime starting a stop watch. The time taken for the rat to flick the tail was noted. This is the reaction time. The reaction time is noted for each rat and the average is calculated.

First group was given 2ml of distilled water and kept as control. Second group was administered with paracetamol at a dose of 20mg/ 100gm of body weight orally. The test drug was administered to the third group at a dose of 200 mg/100gm of body weight separately.

After the lapse of half an hour and one hour, the reaction time of each rat was noted in each group at an interval of 2 minutes (when a rat fails to flick the tail , it should not be continued beyond 8 seconds to avoid injury) and the average was calculated.

The results of control group, standard group and drug treated group were tabulated and compared.

Analgesic activity of KK using Tail flick Method

Groups	**Paw licking response (Sec)**			
	0 min (Sec)	**30 min (Sec)**	**60 min (Sec)**	**120 min (Sec)**
Control	5.56 ± 0.96	5.86 ± 0.96	5.76 ± 0.67	5.86 ± 0.53
KK (5ml/kg. p.o.,)	5.66 ± 0.206^{ns}	6.92 ± 0.678***	7.66 ± 0.516***	8.65 ± 1.52***

n=6, Values are expressed as mean ± S.D using followed by student paired T – test, ns- non significance.

***P<0.001 as compared with control.

Inference: Kabasura kudineer has significant Analgesic action.

ANTI-HISTAMINIC EFFECT OF KABASURA KUDINEER ON ISOLATED GUINEA PIG ILEUM.

Aim

To find out the anti-histaminic effect of Kabasura kudineer on isolated guinea pig ileum.

Preparation of the test drug

500mg of Kabasura kudineer was dissolved in 10ml of water separately and boiled for 15 minutes. The filtrate was used for the experiment.

Solutions Required

Histamine – 1 in 1, 00, 000 strength,

Anti Histamine - Pheniramine maleate 2.5 mg/ml.

Test drug – Kabasura kudineer (50 mg/ml)

Nutrient Solution

Tyrode – 1- 2 litres

Tissues used

Isolated Guinea pig ileum

Apparatus required

Student's organ bath.

Sherrington rotating drum.

Procedure

An overnight fasted Guinea pig weighing about 400gms was sacrificed by a blow on the head and by carotid bleeding. The abdomen was suddenly opened and ileo caecal junction was found out. A small piece of ileal portion was cut and removed and placed in a dish, containing warm aerated Tyrode solution.

The lumen of the ileum was gently rinsed out by pushing Tyrode solution into it, 3cm length segment was cut from this part of ileum and was tied with thread on

both ends without closing the lumen and the tissue was mounted in the organ bath containing Tyrode solution maintained at 37^0C and bubbled with air by an oxygen tube.

First the drum was allowed to run for 1 minute from the baseline. Drugs were given to study the inhibiting effect of Histamine 0.2ml of Histamine was added and allowed to run the drum for 30 seconds. Thus the tissue was standardized and then the drum was stopped and the Histamine was washed out.

Again the Tyrode solution was added to the organ both till the level comes to the baseline. The drum was allowed to run for 1 minute.

To the organ both 1ml of test drug was added, waited for 1 minute then 0.2ml of histamine was added and the drum was allowed to run 30 seconds. The response was recorded. Then the drum was stopped and the Histamine solution and test drug solutions were washed out. Then the above experiment was done for 0.2ml dose of histamine. The drum was allowed to run for 30 seconds. The response was recorded.

Then o.2 ml of Antihistamine and 0.2ml of Histamine was added and the drum was allowed to run for 30 seconds. There was no elevation in the graph and it seemed to be a baseline. Then 0.2ml of Histamine was added to standardize the tissue. Then the tracing was labelled and fixed.

Inference

From the graph it is inferred that the test drug antagonize the effect of Histamine when added together. So the drug Kabasura kudineer has got Anti-histamine activity.

Effect of the KK on histamine induced Contractions of Guinea Pig Ileum

S.No	Treatment				
	Histamin μg/ml	**Mean contraction Mm**	**ml/ml**	**Mean contraction mm**	**% inhibition of Histamine**
1	**10.0**	25.62 ± 0.322	**0.1ml**	15.08± 0147***	40.0
2.	**10.0**	54.0 ± 0.672	0.2ml	48.33± 0.216***	29
3.	10.0	66.130 ± 0.271	0.4ml	61.5 ± 3.216***	7.5
4	10.0	75.0 ± 0.546	0.8ml	74.60 ± 0.967***	4.0

n=6; Values are expressed as mean ± S.D followed by Students Paired 'T' Test

***P<0.001 as compared with that of control.

ACUTE ANTI INFLAMMATORY STUDY ON KABASURA KUDINEER - BY HIND- PAW METHOD IN ALBINO RATS

Winter Etal (1962)

Aim

To study the Acute anti- inflammatory effect of kabasura kudineer.

Preparation of the test drug

2gm of kabasura kudineer was dissolved in 10 ml of honey separately. A dose of 2 ml was given to each rat. This 2 ml contains 200 mg of the test drug.

Procedure

Nine healthy albino rats weighing 100- 150 gm were taken and divided into three groups, each consisting of 3 rats.

First group was kept as control by giving distilled water of 2 ml/ 100gm of body weight. The second group was given Ibuprofen at dose of 20mg/ 100gm of body weight. The third group received the test drug 200mg/100gm of body weight.

Before administration of test drug, the hind-paw volumes of all rats were measured. This was done by dripping the hid-paw (up to tibio- tarsal function) into a mercury plethysmography. While dipping the hind- paw, by pulling the syringe piston, the level of mercury in the centre small tube was made to coincide with red marking and reading was noted from the plethysmograph.

Soon after the measurement, the drugs were administered orally. One hour later, a subcutaneous injection of 0.1 ml of 1%\ (w/v) carrageenin in water was nade into plant or surface of both hind-paw of each rat. Three hours after carrageein injection, the hind-paw volumes were measured once again. The differences between the initial and final volumes were calculated and compared.

The method is more suitable for studying the anti-inflammatory activity in acute inflammation.

ANTI INFLAMMATORY ACTIVITY OF KK IN CARRAGEENAN INDUCED HIND PAW EDEMA

Groups	**Paw volume (ml) by mercury Displacement at regular interval of time**					
	0min	**30min**	**60min**	**120min**	**180min**	**240min**
Control	1.233 ± 0.338	1.733± 0..225	1.766± 0.286	2.200 ± 0.236	2.25 ± 0.273	2.266± 0.236
KK (5ml/kg. p.o.,)	1.533 ± 0.638^{ns}	1.90 ± 0.236^{ns}	2.02 ± 0.966^{ns}	2.932± 0.616^{***}	3.347 ± 0.672^{***}	1.341 ± 0.174^{***}
Standard (Dic.Sodium 5 mg/kg/po)	0.835 ± 0.065^{ns}	1.315 ± 0.069^{ns}	1.128 ± 0.049^{ns}	1.011 ± 0.056^{***}	0.896 ± 0.048^{***}	0. 85 ± 0.054^{***}

n=6; Values are expressed as mean ± S.D followed by student paired T- test.

ns - Non significant as compared with control;

P< 0.001 (***) as compared with control.

Table-6

Anti inflammatory activity of KK in Cotton Pellet Granuloma

Groups	**Cotton pellet Granuloma method**
	Dry Weight (mg)
Control	115.87 ± 15.42
KK(5ml/kg/po)	70.75 ± 8.44***
Standard (Dic.Sodium 5 mg/kg/po)	70.00 ± 7.42***

n=6; Values are expressed as mean ± S.D followed by Students Paired 'T' Test

***P<0.001 as compared with that of control.

Inference

kabasura kudineer has significant Acute Anti inflammatory action.

Acute oral toxicity study

Acute oral toxicity was conducted as per the OECD guidelines (Organization of Economic Cooperation and Development) 423 (Acute Toxic Class Method). The acute toxic class method is a stepwise procedure with 3 animals of a single sex per step. Depending on the mortality and /or moribund status of the animals, on the average 2-4 steps may be necessary to allow judgment on the acute toxicity of the test substance. This procedure results in the use of a minimal number of animals while allowing for acceptable data based scientific conclusion.

The method uses defined doses (5, 50, 300, 2000 mg/kg body weight) and the results allow a substance to be ranked and classified according to the Globally Harmonized System (GHS) for the classification of chemicals which cause acute toxicity

Wistar albino rats of either sex weighing 200-250 g were fasted overnight, but allowed water *ad libitum*. Since the formulation is relatively non toxic in clinical

practice the highest dose of 2000 mg/kg/p.o (as per OECD guidelines “Unclassified”) was used in the acute toxicity study.

The animals were observed closely for behavioural toxicity, if any by using FOB (Functional observation battery).

Repeated oral toxicity study

Repeated oral toxicity studies can be used to get additional information regarding the toxicity profile of a chemical. Repeated oral toxicity studies are defined as those studies where the chemical is administered to the animal for a period covering approximately 10% of the expected life of the animal. Usually, the dose levels are lower than for acute studies and allow chemicals to accumulate in the body before lethality occurs, if the chemical possess this ability.

Experimental procedure

The following experimental procedure was followed to evaluate the repeated oral toxicity study of KABASURA KUDINEER

Group I : Control animals received 1%CMC, 10ml/kg/p.o. for 15 days

Group II : Aqueous extract of KK at the dose of 90mg/kg/p.o. for 15 days

Body weight, food intake and water intake was recorded at two intervals with simultaneous observation for toxic manifestation and mortality, if any. At the end of 15days treatment all the animals were sacrificed by over dosage of ether anaesthesia. Blood was collected and used for haematological studies. Section of liver, kidney, and heart were dissected out and kept in 10% formalin for histopathological studies.

Histopathological study

KC at the dose of 90mg/kg/po daily administered for 15 days did not show evidence of pathological lesions in the tissues tested.

Discussion

The siddha formulation KK was evaluated for its Pharmacological & Toxicological profiles in experimental rats.

The test drug did not exhibit mortality at the dose of 2000 mg/kg/p.o. According to OECD 423, drugs do not show mortality at 2000 mg/kg and above are "Unclassified" under the toxicity scale. Hence further studies with higher doses were not attempted.

In repeated oral toxicity study (90mg/kg/p.o) for 15 days animals treated with KK did not exhibit any significant changes in Hb%, RBC, blood sugar, cholesterol, body weight, food and water intake and behavioural parameters when compared to control animals. KK at the dose of 90 mg/kg/p.o did not alter the Liver marker enzyme status when compared to control animals. No significant change in the Marker enzyme level of kidney was found in animals treated with KK for 15 days

KK exhibited significant analgesic, antipyretic and anti-inflammatory activity in both acute and chronic models of inflammation in rats. In cotton pellet granuloma method KK showed anti-inflammatory activity and the anti-inflammatory activity of KK was comparable to that of Diclofenac sodium 5 mg/kg/p.o. KK exhibited significant reduction in the edema volume of paw injected with carageenan at 30, 60, 120 and 240 mts, with maximum activity at the end of 240 mts. In this model also KK exhibited an anti-inflammatory activity comparable to that of Diclofenac sodium (5 mg/kg/p.o) From this study it can be reasonably assumed that KK exhibits its anti-inflammatory activity due to a mechanism by inhibiting the cyclooxygenase pathway similar to that of Diclofenac sodium.

The reverse pharmacological studies of KK have got good correlation with clinical study report presented in this thesis. The present study also shows the safety profile of the drug in repeated dosing for 15 days. Since there is no significant pathological changes of normal architecture of liver treated with KK for 21 days, the elevated levels of ALT, AST, ALP may be attributed to some other unknown factors (eg. Pesticide residue in raw materials used etc) which are to be probed. However oral drug treatment for 15 days did not exhibit any alteration in the biomarkers of Liver and Kidney.. The formulation exhibited significant antioxidant and inhibition of LPO in rats treated for 15 days.

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