PART I

BRONCHO DILATOR AND ANTI-HISTAMINIC ACTIVITY OF ACTIVITY OF *VELLAI ERUKKAN SAMULA PARPAM* (*Calotropis gigantea,linn*)

&

PART II

ANTI-CANCER ACTIVITY OF GURU PATHANGAM

The dissertation Submitted by

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Under the Guidance of

Dr. A.KUMAR, M.D(s)

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GOVT. SIDDHA MEDICAL COLLEGE,

CHENNAI-106

DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation entitled **" Bronchodilator activity of *Vellai Erukkan Samula Parpam* (*Calotropis gigantea,linn*)" and "Anti-cancer activity of *Guru pathangam*"** is a bonafide and genuine research work carried out by me under the guidance of **Dr. A.Kumar M.D (Siddha)**, The head of the department, Post Graduate Department of Gunapadam, Govt.Siddha Medical College, Arumbakkam, Chennai-106 and the dissertation has not formed the basis for the award of any Degree, Diploma, Fellowship or other similar title.

Date: **Signature of the Candidate**

Place: Chennai **Dr. P.Babu**

GOVT. SIDDHA MEDICAL COLLEGE,

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CERTIFICATE BY THE GUIDE

This is to certify that the dissertation entitled **" Broncho dilator activity of *Vellai Erukkan Samula Parpam* (*Calotropis gigantea,linn*)" and "Anti-cancer activity of *Guru pathangam* "** is submitted to the Tamilnadu Dr.M.G.R.Medical University in partial fulfillment of the requirements for the award of degree of M.D (Siddha) is the bonafide and genuine research work done by **Dr.P.Babu** Under my supervision and guidance and the dissertation has not formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or other similar title.

Date: **Seal and Signature of the Guide**

Place: Chennai

GOVT. SIDDHA MEDICAL COLLEGE,

CHENNAI-106

ENDORSEMENT BY THE HOD,

PRINCIPAL/HEAD OFTHE INSTITUTION

This is to certify that the dissertation entitled **"Broncho dilator activity of *Vellai Erukkan Samula Parpam* (*Calotropis gigantea,linn*)" and "Anti-cancer activity of *Guru pathangam* "** is a bonafide work carried out by Dr.P,Babu under the guidance of **Dr. A.Kumar M.D (Siddha)**, The head of the department, Post graduate department of Gunapadam, Govt.Siddha Medical College, Chennai - 106.

Seal and Signature of the HOD **Seal and Signature of the Principal**

Date: ***Date:***

Place: Chennai **Place:** Chennai

DEDICATED TO SIDDHA SYSTEM AND MY FAMILY

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I dedicate this Dissertation to them.

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PART-II

PART-1

ABBREVIATIONS

Ci - Ciacatrix

Ck - Cork

Co - Collenchymas

Cor - Cortex

Cr - Corona

Cu - Cuticle

Ep - Epidermis

Fi - Fiber

Ixph - Intraxylary phloem

Lep - Lower (Abaxial) epidermis

Mr - Medulary ray

Oe - Ovule

Ov - Ovary

P - Parenchyma

Pa - palisade tissue

Pe - petal

pf - pericyclclic fibic

ph - phloem

pi - pith

po - pollinium

sa - stigma

se - sepal

sf - sclerenchyma fiber

sp - spongy tissue

st - stoma

sy - style

tr - trichome

uep - upper(Ad axial)epidermis

v - vessel

vb - vascular bundle

vi - vein islets

xy - xylem

AT	After treatment
BT	Before treatment
L	Lymphocyte
Alb	Albumin
E	Eosinophil
Dep	Deposits
TC	Total count
ESR	Erythrocyte sedimentation rate
FPC	Few Pus Cells
DC	Differential count
CL	Cholesterol

PCS	Pus Cells seen
P	Polymorphs
Hb	Haemoglobin
FTIR	Fourier Transform Infrared Spectroscopy
ICP-OES	Inductively Coupled Plasma Optical Emission Spectrometry
SEM	Scanning Electron Microscope
VSP	vellai erukkan samula parpam
GP	Guru pathangam
5-FU	5-fluro uracil

PART-1

PART –I

BRONCHO DILATOR AND ANTI-HISTAMINIC ACTIVITY OF VELLAI ERUKKAN SAMOOLA PARPAM

(*Calotropis gigantea,Linn)*

INTRODUCTION

1. INTRODUCTION

There are in our body several supports to the soul for the existence and communication of this life. And these supports are closely connected by "*prana". Siddhars* attach much more importance to this *prana* which is the life principle of the universe absorbed and specialize every human being.

The three physical elements of the external world, viz air (wind), heat (fire) and water are selected in medical science as they form the three fundamental principles. Humoral pathology explains that all diseases are caused by the mixture of the three cardinal humors viz wind, bile, and phlegm. that the relative proportion are these humors are responsiple for a person's physical and mental qualities and disposition .the three humors under reference are called in "*siddha muppini"*.

Siddhar's science also tells us that a man generally takes 15 breaths a minute and this makes 21,600 (15x 60x24) breathe a day. And at this rate he can live for a period of at least 120 years.

According to siddha medicine swasa kasam(Bronchial Asthma) is the one of the *kapha* disorder. It has symptoms of 1.Chest tightness, 2.difficulty in respiration, 3.especially in expirational dyspnea,4. Respiration produce musical sounds, 5. severe dry cough. It has divided into five types .

This is known as acute asthma attack, which can occur as an allergic reaction to an allergen or other substance (acute asthma), or as a part of a complex disease cycle which may include reaction to stress or exercise (chronic asthma).

Asthma is a syndrome characterized by airflow obstruction that varies markedly, both spontaneously and with treatment. Asthmatics harbour a special type of inflammation in the airways that makes them more response than nonasthmatics to a wide range of triggers, leading to excessive wheezing and dyspnea. Narrowing of the airways is usually reversible, but in some patients with chronic asthma there may be an element of irreversible airflow obstruction. Airway inflammation produces airflow limitation, acute broncho constriction, chronic mucus plug formation and airway wall swelling or remodeling. (Masoli et. Al. 2004)

Asthma prevalence is rising sharply with increasing urbanization and westernization. Approximately 300 million people worldwide currently have asthma with estimates suggesting that asthma prevalence increases globally by 50% every decade. (Masoli. et.al. 2004) with the projected increase in the proportion of the world's urban population from 45% to 59% in 2025, there is likely to be a marked increased in number of Asthmatics worldwide over the next two decades. It is estimated that thee may be an additional 100 million persons with Asthma by 2025 (Masoli et.al.2004)

According to the recently conducted cross sectional nationally representative National Family Health Survey (NFHS)-3, the overall prevalence of asthma among adult men and women in India is similar with 1,696 and 1,627 per 100,000 respectively (IIPS and Macro International 2007). The number of men and women with asthma increases steadily with age (Figure 7). Prevalence of asthma is higher in rural areas (1,719 per 100,000 for women and 1,799 per 100,000 for men) than for urban areas and that it is more common among women than men.

The increasing global prevalence of asthma, the large burden it now imposes on patients ,and the high health care costs have led to extensive research into its mechanisms and treatment.

Goals of Asthma Treatment:

Control chronic and nocturnal symptoms

Maintain normal activity, including exercise

Prevent acute episodes of Asthma

Minimise emergency department visits and hospitalisations

Minimal need for reliever medications

Maintain near-normal pulmonary function

Avoid adverse effects of Asthma medications the steroid drugs are used

[Source: The GINA workshop report]

In the modern treatment they are using bronchodilators. And the steroid drugs are using in the acute and chronic condition.That drugs are produced side effects like drowsiness, dryness of mouth, gastric irritation, hepatic and renal damage.

In the present study, an effort has been made to establish the scientific validity for the bronchodilator and antihistaminic property of *Vellai erukkan Samula Parpam*-[Calotropis gigantea.Linn.] a siddha drug.

"வேர் பாரு தழை பாரு மிஞ்சினக்கால்

மெல்ல மெல்ல பற்ப செந்தூரம் பாரே"

- அகத்தியர் சில்லரைகோவை

As per text reference primarily we should be selected medicine from leaf and root of herbals for curing disease. If the disease is not controlled or cured by the above medication then we have to select *parpam* and *chendhuram* type of medicine for treating diseases.

. The *vellai erukkan samula parpam* is a herbal drug. The medicine is in the form of *parpam.* In the siddha medicine

"வீரத்து மிக்கவை பற்பங்களே

பரிகாரத்துமிக்கவை பற்பங்களே"

-தேரன் தரு.

Eventhough, the "*vellai erukkan"* is the herbal drug. It is prepared as "*parpam*"type of medicine . The drug self life is 100 years. This drug in the category of in between herbal and mineral drug. It may had herbal quality , less side effect and more effective to cure disease as mineral drug. Siddhars used *vellai erukkan* as *"kayakarpam*" medicine. We can use this drug for long time and repeatedly. So I have selected this drug for bronchodilator activity in asthma disease..

AIM AND OBJECTIVES

2. AIM AND OBJECTIVES:

Bronchial Asthma is a chronic disease so the patient need long term medication. As per modern medication it produced lot of side effects. So the need of anti asthma drug in alternative medicine with less side effects.

The main aim and object of this dissertation is to do a scientific review on *Calotropis gigantea. Linn.(White Variety) whole plant parpam* and its efficacy in Treating Bronchial asthma (swasa kasam). In *siddha* medical system we are used many numbers of *parpam* for various diseases. Mainly those are used in chronic or acute and serious health disorders. ***Parpam* have self life of 100 years.**

Bronchial Asthma is the one of the emergency and chronic disease. So the medicine may be using for long time in minimized quantity.

Only few herbs are prepared to *parpam*, examples are

1. *Meni samula parpam*

2. *Vazhalipzhala papam and etc*

"Vellai eruukan" is a sacred plant .It also called as "herbal mercury".The reference cited from *siddha* research pharmacopoeia denotes that the *vellai erukkan samula parpam(Calotropis gigantea. Linn)* specially cures *swasa kasam*.(bronchial asthma).

The "*vellai erukkan samula parpam"* can be easily taken by oral route. It does not produce drowsiness , dryness of mouth, addiction , dyspepsia, badodour and gastric irritation. This plant used as a *karpam* in siddha medicine.

In this dissertation work,*"vellai erukkan samula parpam*" is analysed to asses the following aspects,

- Literature Review
- Botanical aspect
- Gunanapadam aspect
- Chemical analysis
- Toxicological study
- Pharmacological study
- Clinical study on Bronchial asthma.

REVIEW OF LITERATURES

3. REVIEW OF LITERATURE:

3.1. BOTONICAL ASPECT:

Calotropis gigantea (Linn) .Br. white variety

Division :Angiosperms

Class :Diucotyledons

Subclass :Gamopetalae

Series :Bicarpellatae

Order :Gentianales

Family:Asclepiadaceae

Genus : Calotropis

Species :gigantea

-Benthan &Hooker

Other names:

Tam: Arkkam

Beng: Akanda

Mar: Rui

Guj: Akado

Eng: Mudar

Gigantic Swallow Wort

Tel: Jilledu – Chettu

Mal: Erukka

Kan: Yakkeda-gida

Arab: Ashur

Sind: Bijalosha

Hindi: Ak, Akan, Akond

Sans: Arka, mandara

-The wealth of India

A shrup or small tree 8-10 feet high, bearing unscented, pale purple or white flowers with spreading corolla lobes. This species is common throughtout India.

The latex which is present in all parts of the plant, contains: water and water solubles 86.0-95.5; and caoutchoue, 5.1-18.6; resins, 73.6 – 87.8; and insoluable matter, 4.5-13.8%.

The latex contains two isometric resinols, C30H50O, alpha-calotropeol and betacalotropeol. Mainly in the ester combination with acetic, isovaleric acids and beta beta amyrin. It also yields a nitrogen and sulphur containing cardiac and fish poison, gigantin, which is similar to, but not identical with. The latex contains also traces of glutathione and a proteoclastic enzyme similar to papain.

The latex has not found any industrial application.it is used to a limited extent in the tanning industry for deodorizing, removing hair and impating a yellow colour to hides. It is said to be an adulterant of Persian opium.

The stem bark contains: ALPA and beta calotropeols, beta-amyin, giganteol, a colourless wax, small amounts of tetrracyclic terpenes, and traces sterols. The flowers contain esters of a alpa and beta calotropeols, beta- amyrin. Volatile, long chain fatty acids, esters of waxy acids and alcohols.

The bark of the stem yields a fibre which is white, silky, strong and durable. It is superior to cotton in tensile strength and is used for making fishing nets and lines, bow strings and twine.

Analysis of the seeds gave: moisture, 7.4; protein 27; ether extract, 26.8; crude fibe and nitrogen-free extracted from the seeds is an olive –green liquid, the acid fraction of which contains: palmitic, 15; oleic, 52, linoleic, 32; and linolenic acid, 0.9%. the unsaponifiable fraction (31%) of the seed wax gave: phytosterol,, stigmosterol, melissyl alcohol; and a hydrocarpon are present.

The seeds bear a fine, soft, glossy and resilient floss of cream colour. Analysis of the floss gave: moisture, 7.2; soluble matter, 4.7-9.7; lignin contains a yellowish brown colouing matter, chlorophyll, a resin, and a crystalline unsaturated substance. The presence of a bittr toxic substance has been reported.

The root park contains beta-amyrin, 2 isomeric crystalline alcohols, giganterols, and iso-giganterol.

The ash of C.gigantea (12.7%) is rich in potash. the wood yields a light charcoal Which is used in gun powder and fire works.

The latex is used is astrong irritant to the skin and mucous membrane. An extract injected into the lymp sac of a frog caused slowing of the heart and acute gastroenteritis. The latex is used in indigenous medicine in combination of Ephorbia neroifolia as a drastic purgative. It is also used as a local irritant.

The stem, root bark, flowers and leaves also are used in medicine. A tincture of the leaves is used in the intermittent fevers. Powdered flowers, in small doses, are useful in the treatment of cold , cough , asthma and indigestion.

The root bark is used in small doses it is a diaphoretic and expectorant, and in large doses (2-4g.) it is an emetic. The root bark, in the form of a paste, is applied in elephantiasis.

3.2.GUNAPADAM ASPECT:

வெள்ளை எருக்கு:

வெள்ளெருக்கி பேர் தனையே விளம்பக் கேளு

மேலான ராசற்சுவ சுரோப்பியவாகும்

மள்ளெருக்கு மந்தார கெணபத்து பகமாகும்

மாதுத்த சதா புஷ் போகாஷ் பலம்

தில்ளெருக்கு சுவேத்த ஞ்சு மோடி யாகுந்

திறகத பச்சி யா புஷ்பியாகும்

பள்ளெருக்குப் பாசுபதர் சலக் காஷையிலா

பாடிய தோர் வெள்ளெருக்கி பேரும

பாடல் -879இ பக்கம் 254 போகர் நிகண்டு 1200

வேறு பெயர்:

ராசாற்கவசுரோப்பியம்

மந்தாரகெணபத்துபகம்

சதாபுஷ்பி

பச்சியாபுஷ்பி

பாசுபதர்

சலக்காஷையிலா

அருக்க

சமஸ்கிருதத்தில் "அர்க்க" எனம் வேறுபெயர்களால் அழைக்கப்படுகிறது

குணபாடம் (மூலிகை வகுப்பு) பக்117

இஃது வெப்ப நாடுகளில் எங்கும் தானே பயிராகும் செடி. இதில் இரு வகை உண்டு. வெள்ளை பூ, சிறிது நீலம் கூடிய பூ இவற்றை உடைய இரு வகுப்புகளுண்டு. வெள்ளைப் பூ பூக்கும் செடியை வெள்ளெருக்கு என்பர்.இஃது இந்தியாவில் எங்கும் வெளிகளில் தனிச்சையாக பயிராகும் செடி வகுப்பை சேர்ந்தது.

பயன்படும்உறுப்பு: இலை,பூ,பால்,பட்டை, வேர்

சுவை: கைப்பு, காரம்இ இனிப்பு

தன்மை: வெப்பம்

பிரிவு: கார்ப்பு

செய்கை:

புழுக்கொல்லி

உடற்றேற்றி

மலமிளக்கி

வெப்பமுண்டாக்கி

எருக்கு பொதுகுணம்:

"மன்னனையுங் கையெடுக்க வைத்தெயிற்றி னேயகற்றி

யுன்னு பிணிப்பணியை யோட்டுதலாற் - சொன்னேன்

எருக்கெனவே பூமி யினிலே விளங்கும்

அருக்க மருக்கனெனலாம்”. -

குணபாடம். மூலிகை..

எருக்கு வளி நோய்களுக்கு நன்மருந்தாகும் பல நோய்களை போக்கும் ஐய நோய்களாகிய இருமல் இரைப்பு என்னும் இவைகளையும் ஓட்டிவிடும்.

இலை:

எலிவிடங் குட்டமைய மேறு கிருமி

வலிசூலை வாயுவிட மந்தம்-ம

எல்லாமகலு மெருக்கிலை யைக்கண்டால்

வில்லார்நுதலேவிளம்பு.” -

குணபாடம். மூலிகை..

இலையை வதக்கிக் கட்டிகளுக்கு கட்ட அவை பழுத்துடையும்.செங்கல்லைழுக்கக்காய்ச்சி அதன்மீது வைத்து சூடுதாங்கும்படி அழுத்திவர அது மறையும்.

வெள்ளெருக்கு வேர்:

“வெள்ளெருக் கின்புற வேருமிப் படி

கொள்ளவே விருச்சிகக் கூட்டமாந் தேட்குல

முனைத் தினுக் குங் கொடுத் தருளலா முண் மையே”

-குணபாடம். மூலிகை..

வெள்ளெருக்கம் வேரை வெள்ளாட்டு நீரில் ஊறவைத்து உலரத்திப் பொடியாக்கி தேள்கடிக்கு கொடுக்கில் அது குணமாகும்.

வேர் பட்டை:

செய்கை

வெப்பகற்றி

உடற்தேற்றி

வெப்பமுண்டாக்கி

வியர்வைப்பெருக்கி

வாந்தியுண்டாக்கி

எருக்கு பட்டை கற்பம்

“கற்ப முறைபெண்போற் கணவனெனும் பண்டிதன்சொல்

கற்ப முறைக்குக் கடுகுணவி-கற்பமுறை

மூவருக்கங் கட்டைமுதலொடுநன் மாத்திரமன்

வரூக்கங் கட்டையது முன்”.

தேரன் யமக வெண்பா-

முதிர்ந்த பழைய எருக்கம்பட்டையின் வேர் முதலானவற்றை ஒரு நெல் அளவில் தண்ணீரில் கற்பமாய் உண்டால் வளிப்பிணி (வாதம்) நீங்கும்.

மேற்படி பொடியைத் திப்பிலியுடனும் மிளகுடனும் உட்கொள்ள முறையே வெறிநோயும் ஐயநோயும் ஒழியும்.

வெள்ளெருக்கம் பால்:

“வலியின் வலிசுளுக்கு மாவாத சந்நி

யெலியின் விஷஞ்சுரங்க ளெல்லாம் - வலியற்றுக்

காலைத் தொழுதே கடற்புக்கும் வெள்ளெருக்கம்

பாலைத் தொடுவாரைப் பார்.”

-குணபாடம். மூலிகை..

வெள்ளெருக்கம் பாலால் எலி நஞ்சு, சுளுக்கு. கட்டி, வெட்டையாலுண்டான கீல் வாயு, நரித்தலை வாயு இவைகளுக்கு பற்றிடலாம். பல் நோய், பல் சொத்தை, பல்ஈறுகட்டு இவைகளுக்கு பாலை தொட்டு வைக்கலாம்.

.2 கற்றாழை: (Aloe vera) கற்றாழை கற்ப மருந்து

கற்றாழை பற்பமாக்கும் மூலிகை.

FIG:2

Kingdom:	Plantae
clade:	Angiosperms
clade:	Monocots
Order:	Asparagales
Family:	Xanthorrhoeaceae
Subfamily:	Asphodeloideae
Genus:	Aloe
Species:	A. vera

Aloe vera, pronounced also known as the true aloe or medicinal aloe, is a species of succulent plant in the genus Aloe that is believed to have originated in the Sudan. Aloe vera grows in arid climates and is widely distributed in Africa, India, Nepal and other arid areas.The species is frequently cited as being used in herbal medicine. Many scientific studies on the use of extracts of Aloe vera have been undertaken, some of them conflicting.

Despite these limitations, there is some preliminary evidence that Aloe vera extracts may be useful in the treatment of wound and burn healing, minor skin infections, sebaceous cysts, diabetes, and elevated blood lipids in humans These positive effects are thought to be due to the presence of compounds such as polysaccharides, mannans, anthraquinones, and lectins.

DescriptionAloe vera is a stemless or very short-stemmed succulent plant growing to 60–100 cm (24–39 in) tall,spreading by offsets. The leaves are thick and fleshy, green to grey-green, with some varieties showing white flecks on the upper and lower stem surfaces. The margin of the leaf is serrated and has small white teeth. The flowers are produced in summer on a spike up to 90 cm (35 in) tall, each flower pendulous, with a yellow tubular corolla 2–3 cm (0.8–1.2 in) long Like other Aloe species, Aloe vera forms arbuscular

mycorrhiza, a symbiosis that allows the plant better access to mineral nutrients in soilTaxonomy and etymology

Aloe vera is now widely used on facial tissues, where it is promoted as a moisturiser and/or anti-irritant to reduce chafing of the nose of users suffering hay-fever or cold. It has also been suggested that biofuels could be obtained from Aloe vera seeds. It can also be used to retwist dreadlocked hair, a favourite agent for vegans and those preferring natural products. Aloe vera is also used for soothing the skin, and keeping the skin moist to help avoid flaky scalp and skin in harsh and dry weather. Aloe vera may also be used as a moisturizer for oily skin.

Historical uses

Aloin was the common ingredient in over-the-counter (OTC) laxative products in the United States prior to 2003, when the Food and Drug Administration ruled that aloin was a class III ingredient, thereby banning its use. It should be noted that unprocessed aloe that contains aloin is used primarily as a laxative, whereas processed Aloe vera juice that does not contain significant amounts of aloin is used as a digestive healer. Manufacturers commonly remove aloin in processing due to the FDA ruling.

3.3 SIDDHA ASPECT OF THE DISEASE:

இரைப்பிருமல்

வேறுபெயர்கள்: இழுப்பு நோய், சுவாசகாசம் .

இயல் :

இன்ன வகையென்று குறிப்பிட்டுக் கூறமுடியாதபடி ஒரு காரணமுமின்றி மார்பை இறுக்கியது போன்ற வேதனை மூச்சை வெளியிடவும், உள்இழுக்கவும் முடியாமல் திணறச்செய்தல் வெளியாகும் மூச்சு மிகுந்த சிரமத்துடன் வெளியாதல் குழல், யாழ், வீணை, போன்ற வாத்தியங்களைப் போல் ஒலி இருமல் காணல், கோழை வெளியாதல் இல்லை

நோய் வரும் வழி:

ஐயத்தை மிகுதிப்படுத்தும் உணவு வகைகளாலும்புல், பூண்டு, அரிசி,கேழ்வரகு முதலியவைகளின் சுணையாலும், தனக்கு ஒவ்வாத நாற்றப் பொருட்களை முகர்வதாலும் இந்நோய் பிறக்கும்

“கால்பெருக் குணவுபொருள் தண்ணீர் மாறல்

கருதிருமல் மிகல்வாந்தி குளிர்ந்த காற்று

மால்செய்து நாள்தோறும் வறுத்துங் காய்ச்சல்

மந்தன முயிர்நிலையி லடிகள் தாக்கல்

ஏல்சீத பேதிவிட பாண்டு புகைகள்

இலகிய நெல் லாதிமணிச் சுணையுட் செல்லல்

மேல்வழியிற் சிலவரினு மிரைப்பாம் நோயு

மேவுமென முனிவரர்கள் விளம்பினாரே''.

-கையெழுத்துப்பிரதி

நோயின் முற்குறிகுணங்கள்:

பன்னாட்கள் துன்பப்பட்டவர்கள் நோய்வருமுன் இதன் குறியை அறிவார்கள்.வரக்கூடிய நோயின் வன்மையையும் அளவிடுவார்கள்.ஆகாத உணவும் ஆகாத காற்றின் மணமும் பட்டவுடன் மூக்கில் நீர்பாய்தல், தும்மலுண்டாதல், மார்பு நோதல், மார்பை இறுக்கிக் கட்டியது போலிருத்தல், வேதனை,இயற்கை மூச்சானது தடைப்படல், விலாப்பக்கம் வலித்து மூச்சுத்திணறல், வயிறுப்பல், உடல்வியர்த்தல் போன்ற குறிகுணங்கள் உண்டாகும்.

- சித்த மருத்துவாங்கச் சுருக்கம்

''மார்பில் விலாவிரண்டில் மண்ணுமிரு நெரியில்

சேர்ந்து வலித்தல் திணறல்.'. - தார்மூச்சு

உப்பல் வயிற்றி லுருவதுவே முற்குறியாச்

செப்பிரைப்பு நோய்க்கிதனைத் தேர்''.

-கையெழுத்துப்பிரதி

பொதுகுறிகுணங்கள்:

''வன்மையாய்க் கோழைகட்டி இருமி வீழும்

மாநாகம் போலவே வாங்குஞ் சுவாசம்

திண்மையாய்ச் செருமலுண்டா மடிக்க டிக்குஞ்

சீரண மிலாமலே வயிறு மூதும்

நன்மையாய் நாசியது தணல்போ லாகும்

நலிந்துடம்பு வற்றி வருங் குரலுங் கம்மும்

உண்மையா யுண்ணாக் கிலுாறுங் கேணி

யுழந்துமே சுவாசகாசத்தினாலே

-யூகி சிந்தாமணி

இந்நேயில் மூக்கிலிருந்து வெளியாகும் காற்று அனல் வீசும்.தொண்டை கட்டி மூச்சு எலி கூச்சிடுதல் போல் ஒலிக்கும். மார்பில் கோழை கட்டி இருமலெழும்.நோய் முதிரின் வெளியாகும் மூச்சு நல்ல பாம்பு சீறுவது போல் ஒலிக்கும்.உணவு செரியாது, வயிறுப்பும். இதனை இசிவு இருமல் என்றும் கூறுவர்.

‘‘கட்டியே கோழை இருமவே வீழ்ந்து

கச்செவி சீறுதல் போல்

முட்டியே மூச்சு வன்மையாய்ச் செருமி

மூக்கழல் எய்தியே யுடலம்

வற்றியே மெலிந்துண் ணாவரை நீரும்

வரட்சீ ரணமிகு வியர்வை

கட்டிபோல் வயிறு மூதிடி லிரைப்பா

மிருமலென் றோதுவர் காணே’’.

-கையெழுத்துப் பிரதி

நோய் எண்:

1. வளிஇரைப்பு
2. ஐயஇரைப்பு
3. ஐயவளிஇரைப்பு
4. முக்குற்ற இரைப்பு
5. மேல்நோக்கு இரைப்பு

சித்த மருத்துவாங்கச்சுருக்கம்

முக்குற்ற முதலிய வேறுபாடுகள்:

வளியும் ஐயமும் சேர்ந்த மிகுதியே காரணம்.

உற்றிடும் ஐயநாடி

ஓங்கியே துடித்து நின்றால்

பற்றிடும் மிரும லீளை

பதறியே இரைப்புண்டாக்கி

மெத்தவே கோழை வாயு

மிகுந்திடும்----------

கையெழுத்துப்பிரதி

நாடிநடை:

‘‘கபத்தினையன்றி காசசுவாசம் காணாது’’

-தேரையர் பிணிமுதற் காரணம்

ஐய நாடி மிகுதியாலும், வளி ஐய தொந்தத்தாலும், வாயுவால் தூண்டப்பட்ட பித்தமிகுதியாலும், ஐய பித்த தொந்தத்தாலும் இரைப்பு நோய் உண்டாகும்.

எச்சில்:

கோழை அல்லது சளியானது நுரைத்தும்,அளவில் மிகுந்தும், பளுவற்றும் இருப்பின் வளிக்குற்றத்தினால் வந்தது எனலாம்.கறுத்துக்கெட்டிப்பட்டு, புலால் மணத்துடன் கடினமாகவும், வெளுத்தச் சீழ் கலந்தது போலும் மஞ்சள் நிறத்துடனும் காணின் ஐயக்குற்றத்தினால் வந்தது எனலாம்.

-நோய்நாடல் நோய்முதல்நாடல் திரட்டு-பாகம்1

நீர்க்குறி:

‘‘அறவெளிர்ப்பிலும் சளியைப் போல் விழினது

மறவன் அதி கொதிப்பால் வருவனமே’’

நீர் மிகவும் வெளுத்தாலும், அதில் சளியைப் போல் விழுந்தாலும் அந்த நீர் ஐயத்தின் மிகுந்த கொதிப்பால் வருகின்ற நீராகும்.

''விந்துவைப் போன்ற நீர் விழல் கப நோயையும்

பந்தித்த சந்நிபாதத்தையுந் தரும்''

என்பதனால் இந்திரியத்தைப் போன்ற நீரானது, வன்மையுள்ள கப நோயையும் (கோழை நோய்களாகிய சயம், சுவாசம், காசம் முதலியவை) உறுதியுள்ள சன்னி நோயையும் தரும்.

நெய்க்குறி:

''முத்தொத்து நிற்கின் மொழிவதென் கபமே.''

எண்ணெய்த்துளி விட்டது விட்டவாறே சிறிதும் பரவாமல் முத்துப்போல் நிற்குமானால் அந்நீர் ஐய நோயைக் காட்டுவதாகும்.

நிறக்குறி:

''நிலமிகு கபமே ஆகின்

நிறைநுரை போன்றிருக்கும்

இலகுமம் மூத்திரத்தில்

எண்ணெய்யை விட்டுப்பார்க்கில்

சாற்றின கபத்தி னுக்குச்

சல்லடைக் கண்போற் காணும்

வேற்றொரு துளியாய் நின்றால்

விருதாகுஞ் சாத்தியந்தான்

ஆற்றியே மெல்லப் பரவின்

அது சுக சாத்தியந் தான்.''

சேத்துமகோப நீர் நிறம்:

''வளமுறை வெள்ளையாகி வற்றி நீர்குறுகி நின்றால்

தெளிவுறச் சேத்துமத்தின் செய்கை யென்றுறைக்கும்

குளிர்மையினாலே வெள்ளையாகிய குணமாமென்றும்

இளகு பச்சிரத்தந்தன்னா லிறுகின தென்றுஞ் சொல்லே.''

நீர் வெண்மை நிறம் பொருந்தி அளவிலும் குறைந்திருந்தால் அது

சேத்துமத்தாலுண்டான குணமாகும -தேரன் நீர்க்குறி சாத்திரம்.

சீதமிகுதி நெய்க்குறி:

''வல்லநல் லெண்ணெய் துளியா வார்த்ததில் நெகிழாதாகில்

சொல்லருங் குளிர்மை மீறித் தோஷமுற் றெய்து மென்றும்.''

நீரில் விட்ட எண்ணெய்த்துளியானது நெகிழாமல் -தேரன் நீர்க்குறி சாத்திரம்.

அப்படியேயிருந்தால்,சீதமிகுதியால் உண்டானதென்று அறியலாம்.

3.4. MODERN ASPECT OF THE DISEASE :

Bronchial Asthma

Asthma is an inflammatory disease of the small airways.It is characterized by episodic, reversible bronchial obstruction due to hyper responsiveness of tracheobronchial tree to a multiplicity of intrinsic and extrinsic stimuli manifested.

Clinically by paroxysms of polyphonic wheeze, dyspnoea, and cough which may be relieved spontaneously or as a result of therapy. Asthma is best described by its technical name: Reversible Obstructive Airway Disease (ROAD). In other words, asthma is a condition inwhich the airways of the lungs become either narrowed or completely blocked, impeding normal breathing.

However, in asthma, this obstruction of the lungs is reversible, either spontaneously or with medication. Quickly reviewing the structure of the lung: air reaches the lung by passing through the windpipe (trachea), which divides into two large tubes (bronchi, one for

each lung. Each bronchi further divides into many little tubes (bronchioles), which eventually lead to tiny air sacs (alveoli), in which oxygen from the air is transferred to the bloodstream, and carbon dioxide from the bloodstream is transferred to the air. Asthma involves only the airways (bronchi and bronchioles), and not the air sacs. The airways are cleaned by trapping stray particles in a thin layer of mucus which covers the surface of the airways.This mucus is produced by glands inside the lung, and is constantly being renewed. The mucus is then either coughed up or swept up to the windpipe (trachea) by cilia, tiny hairs on the lining of the airways. Once the mucus reaches throat, it can again be coughed up. Do not reswallow.Although everyone's airways have the potential for constricting in response to allergens or irritants, the asthmatic's airways are oversensitive, or hyperreactive

Common asthma triggers include:

Animals (pet hair or dander) Dust Changes in weather (most often coldweather)chemicals in the air or in food Exercise old Pollen Respiratory infections, such as the common cold Strong emotions (stress) Tobacco smoke Drugs -Aspirin and other nonsteroidal anti-inflammatory drugs (NSAIDs) provoke asthma in some patients.

Many people with asthma have a personal or family history of allergies, such as hay fever (allergic rhinitis) or eczema. Others have no history of allergies.

Epidemiology:

As of 2009, 300 million people worldwide were affected by asthma leading to approximately 250,000 deaths per year. It is estimated that asthma has a 7-10% prevalence worldwide. As of 1998, there was a great disparity in the prevalence of asthma across the world, with a trend toward more developed and westernized countries having higher rates of asthma with as high as a 20 to 60-fold difference. Westernization however does not explain the entire difference in asthma prevalence between countries, and the disparities may also be affected by differences in genetic, social and environmental risk factors Mortality however is most common in low to middle income countries, while symptoms were most prevalent (as much as 20%) in the United Kingdom, Australia, New Zealand, and Republic of Ireland; they were lowest (as low as 2–3%) in Eastern Europe, Indonesia, Greece, Uzbekistan, India, and Ethiopia.

Asthma affects approximately 7% of the population of the United States and 5% of people in the United Kingdom. Asthma causes 4,210 deaths per year in the United States. In 2005 in the United States asthma affected more than 22 million people including 6 million children It accounted for nearly 1/2 million hospitalizations that same year. More boys have asthma than girls, but more women have it than men In England, an estimated 261,400

people were newly diagnosed with asthma in 2005; 5.7 million people had an asthma diagnosis and were prescribed 32.6 million asthma-related prescriptions.

All ages, predominantly early life occur asthma

Adults: 2-5% population

Children: 15% population

50% dx <10y, 85% dx <40y, 15% dx > 40y

2:1 male/female preponderance in childhood

HISTORY:

Asthma was first recognized in ancient Egypt and treatment was inhalation of frankensense officially recognized as a specific respiratory problem separate from others was first recognized and named by Hippocrates circa 450 BC. During the 1930s–50s, asthma was considered as being one of the 'holy seven' psychosomatic illnesses. Its aetiology was considered to be psychological, with treatment often based on psychoanalysis and other as these psychoanalysts interpreted the asthmatic wheeze as the suppressed cry of the child for its mother, so they considered that the treatment of depression was especially important for individuals with asthma. among the first papers in modern medicine, is one that was published in 1873 and this paper tried to explain the pathophysiology of the disease And one of the first papers discussing treatment of asthma was released in 1872, the author concluded in his paper that asthma can be cured by rubbing the chest with hands,Among the first times researchers referred to medical treatment was in 1880, when Dr. J. B. Berkart used IV therapy to administer doses of a drug called pilocarpin. In 1886, F.H. Bosworth FH suspected a connection between asthma and Epinephrine was first referred to in the treatment of asthma in 1905, and for acute asthma in 1910.

Disease Pattern:

Episodic - acute exacerbations interspersed with symptom-free periods Chronic - daily airway obstruction which may be mild, moderate or severe may or may not super imposed acute exacerbations Life-threatening- slow-onset or fast-onset (fatal within 2 hour)

Mortality:

Fatal asthma 1-7% asthmaticsIncreasing death rate, abuse of inhaled BronchoDilators Risks for death: previous life-threatening asthma, severe disease, recent hospitalization or

emergency room treatment, non-compliant and confusion of re treatment, under- treatment with Corticosteroids, discontinued treatment, severe airway hyper reactivity.

Types:

Extrinsic asthma (Atopic asthma, early onset asthma) Onset is in childhood.Identified by skin sensitivity testAsthmatic inflammatory reaction is characterized by a cellular infiltrate rich in Eosinophils.

Intrinsic asthma (Non-atopic asthma and late onset Asthma). It can starts at any age especially in late adulthood .There was no role of allergens in the production of the disease.

Pathophysiology:

Chronic airway inflammation as evidenced by cellular infiltration of airway by activated eosinophils,mastcells,macrophages and T-lymphocytes released mediators from the above cells cause bronchial smooth muscle contraction Denudation and desquamation of the epithelium forming mucous plugs that obstruct the airway Airway remodeling as evidenced by Smooth muscle hypertrophy and hyperplasia. Goblet cell and sub-mucosal gland hypertrophy leading to mucous hypersecretionCollagen deposition causing thickening of lamina reticularisCellular infiltration, oedema and possible airway wall thickening.

Clinical features:

Symptoms

Most people with asthma have attacks separated by symptom-free periods. Some people have long-term shortness of breath with episodes of increased shortness of breath.Either wheezing or a cough may be the main symptom. Asthma attacks can last for minutes to days, and can become dangerous if the airflow is severely restricted. Symptoms include Cough with or without sputum (phlegm), production Pulling in of the skin between the ribs when breathing (intercostal retractions), Shortness of breath that gets worse with exercise or activity. Wheezing, which comes in episodes with symptom-free periods in between may be worse at night or in early morning, may go away on its own, gets better when using drugs that open the airways (bronchodilators),gets worse when breathing in cold air, gets worse with exercise,gets worse with heartburn (reflux), usually begins suddenly

Emergency symptoms:

Bluish color to the lips and face, decreased level of alertness, such as severe drowsiness or confusion, during an asthma attack extreme difficulty breathing and rapid pulse severe anxiety due to shortness of breath sweating other symptoms that may occur

with this disease: Abnormal breathing pattern breathing out takes more than twice as long as breathing in breathing temporarily stops Chest pain, Tightness in the chest.

Status asthmaticus:

It is a medical emergency, patient is hypoxic and cyanosed due to severe bronchospasm.It is characterized by Tachycardia (pulse rate > 120), Tachypnoea (respiratory rate > 30/minute), sweating, pulsus paradoxus (> 10 abnormal,> 20 profound obstruction), altered level of consciousness,and an inspiration-expiration ratio of 1:3 or 1:4.

Life threatening Features:

Patient cannot speak,Central cyanosis,Exhaustion,confusion,altered consciousness,Bradycardia,Silent chest,Unrecordable peak flow,Severe hypoxaemia(< 8 kPa)

Diagnosis :

Clinical

- **Episodic asthma**: Paroxysms of wheeze, dyspnoea and cough, asymptomatic between attacks.
- **Acute severe asthma**: Upright position, use accessory respiratory muscles, can't complete sentences in one breath, tachypnea > 25/min, tachycardia > 110/min, PEF < 50% of pred or best, pulsus paradoxus, chest hyperresonant, prolonged expiration, breath sounds decreased, inspiratory and expiratory rhonchi, cough.
- **Life-threatening features**: PEF < 33% of pred or best,silent chest, cyanosis, bradycardia, hypotension, feeble respiratory effort, exhaustion, confusion, coma, PaO2 < 60, PCO2 normal or increased, acidosis (low pH or high [H+]).
- **Chronic asthma**: Dyspnea on exertion, wheeze, chest tightness and cough on daily basis, usually at night and early morning; intercurrent acute severe asthma (exacerbations) and productive cough (mucoid sputum), recurrent respiratoryinfection, expiratory rhonchi throughout and accentuated on forced expiration.

Physiological

- Demonstration of variable airflow obstruction with reversibility by means of FEV1 and PEF measurement (spirometer and peak flow meter).

  1. FEV1 < 80% of pred – PEF < 80% of pred.

  2. Reversibility: A good bronchodilator response is a 12% and 200ml improvement in FEV1 20 min after inhalation of 200ug salbutamol (2 puffs).

3. Diurnal peak flow variation: Normal variation: Morning PEF 15% lower than evening PEF. With asthmathis variation is > 15% (morning dipping).

4. Provocation studies: (a) **Exercise:** A 15% drop in FEV1 post exercise indicates exercise induced asthma.

(b) **Metacholine challenge**: A 20% reduction in FEV1 at Metacholine concentrations < 8mg/ml indicates bronchial hyperreactivity. This is expressed as a PC20 value of eg 0.5mg/ml (= a 20% reduction in FEV1 at 0.5mg/ml Metacholine).

Immunological

- Skin prick wheal and flare response.
- IgE
- Eosinophil cationic protein (ECP).
- Peripheral blood and sputum eosinophilia
- Chest X Ray may be normal between attacks, Rule out other causes of wheezing .

Differential diagnosis:

- Chronic bronchitis
- Emphysema
- Cystic fibrosis
- Mechanical airway obstruction
- Foreign body aspiration
- Endobronchial tumour
- Cardiac failure
- Pulmonary embolism
- Pulmonary eosinophililia
- Carcinoid syndrome
- Allergic bronchopulmonary aspergillosis

Dietery advice:

Theraputic foods or nutrients that help controlling asthma are: Omega-3 and omega-6 fatty acids, foods high in flavonoids and beta carotene, Vitamin B12, Vitamin B6 (Vitamin B6 deficiency is common in asthmatics), high amounts of vitamin B12 supplements (1,500 mcg per day) have been found to reduce the tendency for asthmatics to

react to sulfites, Selenium, Vitamin E, Vitamin C, and Magnesium (magnesium can prevent spasms of the bronchial passages).

Medical advice:

- Patient are advised to avoid known offending allergen which is identified either by experience or by skin sensitivity test.
- Take light meals at night and try to sleep early
- Drink plenty of water
- Try to avoid dust, cigarette smoke and smoky surroundings.
- Avoid cold water bath.Avoid cold ,deep fried food.
- Avoid keeping pets such as dogs, cats.
- Avoid alcohol, lime and bananas.
- Advice to do breathing exercise

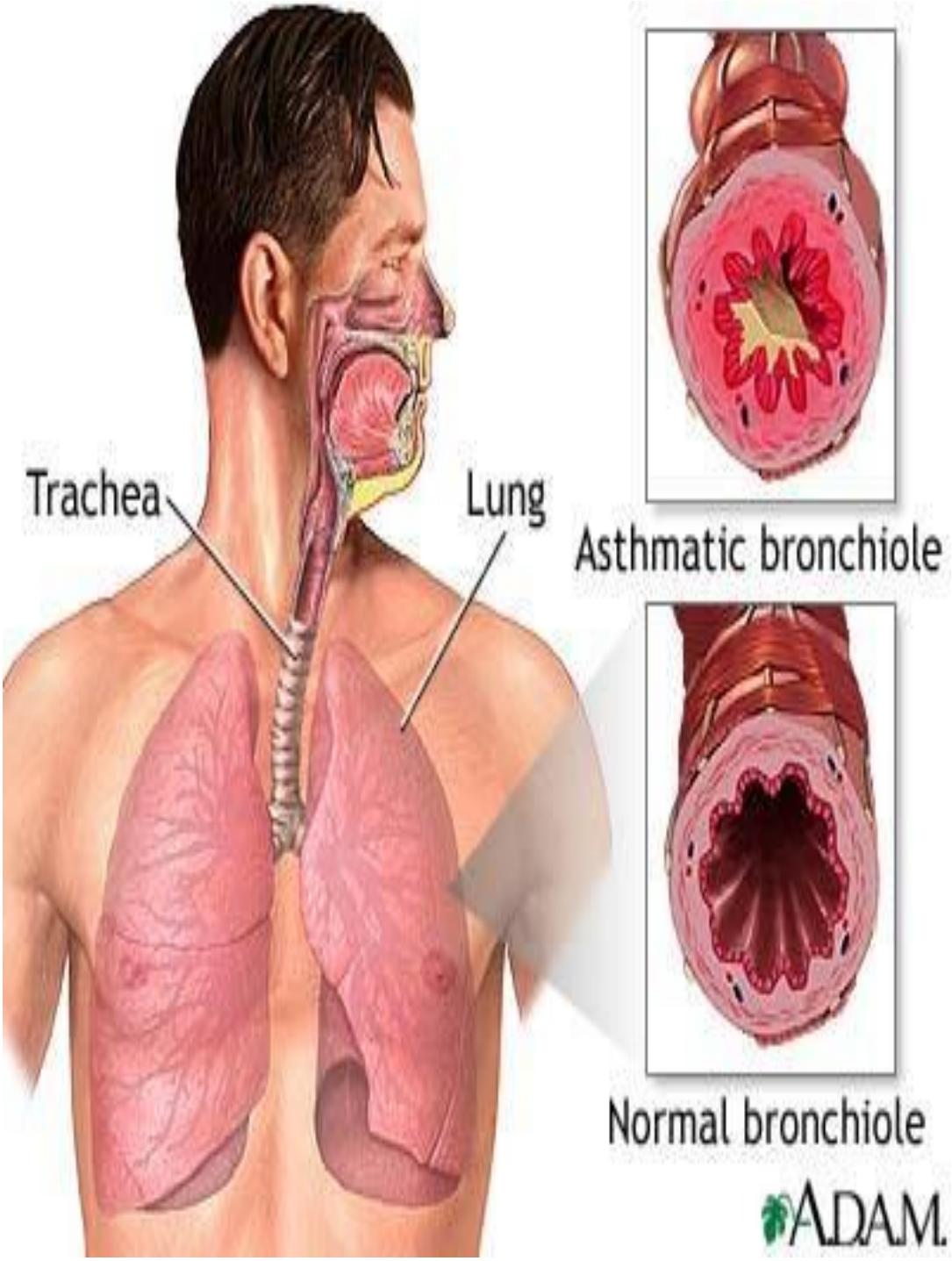

Trachea
Lung
Asthmatic bronchiole
Normal bronchiole
A.D.A.M.

Fig: 3

3.5 LATERAL RESEARCH OF THE DRUG:

- **Anti-Diarrheal:** Study of the hydroalcoholic extract of the aerial part of C gigantea on castor oil-induced diarrhea model in rats showed remarkable anti-diarrheal effect.
- **Latex / Wound Healing:** Study using an excision and incision wound model showed to latex to have significant wound healing activity, similar to the standard FSC (Framycetin sulphatecream).
- **Antibacterial:** Study showed the latex to possess potent bactericidal activity attributed to the presence of biologically active ingredients with antimicrobial activity of the ethanoliextract.
- **Anti-Inflammatory:**Anti-inflammatory studies of extracts of T procumbens and C gigantea showed greater anti-inflammatory action with the combined effect of CG and TP with ibuprofen than ibuprofen alone, probably through the potentiation of its inhibitory effect on the synthesis and release of various inflammatory mediators.
- **Vasodilation:** Effect of latex from C gigantea in the green frog R hexadactyla showed a significant increase in cardiac output. Evidence suggests the prime action of latex on the cardiovascular system involves changes in the cation (Ca, Na) permeability, with consequent excitation of Ca channels in the heart muscle and an increase coronary flow. Therefore, dilatation property is likely responsible for the pharmacologic actions of the latex.
- **Hepatoprotective:** Preliminary screening yielded triterpenoids, steroids, flavonoids and glycosides. Study showed C gigantea stem extract reduced lipid peroxidation and significantly improved biochemical parameters in CCL4-treated rats.
- **Cytotoxic / Pregnanone:** Study yielded a new pregnanone, named calotropone, together with a known glycoside, from the ethanolic extract of the roots of C gigantea. The compounds exhibited inhibitory effects toward chronic myelogenous leukemia K562 and humangastric cancer SGC-7901 cell lines.
- **Antipyretic:** Study showed the extract of C gigantea to have potent antipyretic activity against both yeast-induced and TAB-vaccine induced fever, suggesting a potential source for a cheaper and potent antipyretic agent.
- **Insecticidal:** Study of extracts of C gigantea showed insecticidal activity against T castaneum.

தேன் (அனுபான மருந்து):

செய்கைகள்:

உள்ளழலாற்றி மலமிளக்கி

துவர்ப்பி அழுகலகற்றி

கோழையகற்றி போஷணகாரி

பசித்தீத்தூண்டி தூக்கமுண்டாக்கி

சுத்தி:

நீர் எந்திரத்திலிட்டுக் காய்ச்சி சூடாயிருக்கும்போதே, ஈரக்கம்பளியிலிட்டு வடிகட்டிக் கொள்ளவேண்டும்.

ஓட்டைச் சுட்டுத் தேனில் போட்டு உபயோகிப்பது நாட்டு வழக்கம்.

குணம்:

"ஐயிரும லீளைவிக்க லக்கிப்புண் வெப்புடல்நோய்

பைய வொழியும் பசியுமுறும்- வையகத்தி

லெண்ணுமிசை யாமருந்திற் கேற்ற வனுபான

நண்ணுமலைத் தேனொன்றி னால்" -குணபாடம்

உபயோகங்கள்:

தேன் ஒரு சிறந்த துணை மருந்தாகும அனுபானப் பொருளாவதன்றி அவிழ்தப் பொருளாகவும் இருந்து தேகத்தை நன்னிலையில் வைத்து, வாத முதலிய முக்குற்றங்களையும் போக்குகின்றது.

"அனுபான மாய்ப்பின் அவிழ்தமுமாய்த் தோன்றி

கனமான தேகநிலை காட்டிப்- பினுமே

யரசன் முதல்வோ ரையுமாட்டு வித்தாலே

பிரசத் தினாற்போம் பிணி" -குணபாடம்

அவிழ்தம் பலிக்க வேண்டுமாயின் அனுபானப்பொருள் தேவை என்பதையும், அவ்வனுபானப் பொருட்களில் தேனும் ஒன்று என்பதனையும்,

"அனுபானத்தினாலே யவிழ்தம் பலிக்கும்

இனிதான சுக்கு ன்னலிஞ்சி – பினுமே

கோமயம் பால்முலைப்பால் கோநெய்தேன் வெற்றிலைநீர்

ஆமிதையா ராய்ந்துசெய லாம்''

-பதார்த்தகுணசிந்தாமணி

குழந்தைகளின் இருமலுக்குத் தேன் இரண்டு அவுன்ஸ், எலுமிச்சை பழரசம் சமஅளவு கூட்டி கொடுக்க தணியும். தேனைப்பானகம் செய்து வந்தால் கபப்பிணிகள் தீரும்,

''இறவுளர் அமுதையை இறவுளதாக்கும்'' என்ற அடியால் அறியலாம்.

தேனை சூடுள்ள பார்லி அரிசி கஞ்சியுடன் கொடுக்க மலபந்தம், செரியாமை, நீர்க்கோவை, இருமல், தொண்டை விரணம், நுரையீரல் சம்மந்தமான பிணிகள் தீரும்.

Nutrition:

Honey is a mixture of sugars and other compounds. With respect to carbohydrates, honey is mainly fructose (about 38.5%) and glucose (about 31.0%),/Honey making it similar to the synthetically produced inverted sugar syrup, which is approximately 48% fructose, 47% glucose, and 5% sucrose. Honey's remaining carbohydrates include maltose, sucrose, and other complex carbohydrates As with all nutritive sweeteners, honey is mostly sugars and contains only trace amounts of vitamins or minerals Honey also contains tiny amounts of several compounds thought to function as antioxidants, including chrysin, pinobanksin, vitamin C, catalase, and pinocembrin. The specific composition of any batch of honey depends on the flowers available to the bees that produced the honey

Typical honey analysis:

Fructose**: 38.2%**

Glucose**: 31.3%**

Maltose**: 7.1%**

Sucrose**: 1.3%**

Water**: 17.2%**

Higher sugars**: 1.5%**

Ash**: 0.2%**

Its glycemic index ranges from 31 to 78, depending on the variety. Honey has a density of about 1.36 kilograms per litre (36% denser than water).

Uses:

Osmotic effect

Honey is primarily a saturated mixture of two monosaccharides, with a low water activity; most of the water molecules are associated with the sugars and few remain available for microorganisms, so it is a poor environment for their growth. If water is mixed with honey, it loses its low water activity, and therefore no longer possesses this antimicrobial property.

Use for diabetic ulcers

Topical honey has been used successfully in a comprehensive treatment of diabetic ulcers when the patient cannot use topical antibiotics.

Acidity

The pH of honey is commonly between 3.2 and This relatively acidic pH level prevents the growth of many bacteria.Some studies suggest the topical use of honey may reduce odors, swelling, and scarring when used to treat wounds; it may also prevent the dressing from sticking to the healing woundHoney has been shown to be an effective treatment for conjunctivitis in ratsPersons who have cough,pneumonia or some other conditions at the lung may take one tea spoon of honey with as much of almond oil twice a day and alternatively one tea spoon of honey with warm water twice a day.

Asthma patients also get relief by taking two tea spoons of honey is a glass of boiling water. Copper in honey works to the good of liver disorders. For athletic Nutrition in a rating of 1 to 10,honey ranks the highest at 9 sulphur in honey purified blood. In rheumatic and gout cares,it helps to reduce the uric acid.

MATERIALS AND METHODS

4. MATERIALS AND METHODS:

4.1. PREPARATION OF THE DRUG:

Vellai erukkan samula parpam (Calotropis gigantea.Linn.) White Variety. Whole plant parpam

INGREDIENTS:

Vellai erukkan samulam (Calotropis gigantean.) white variety whole plant.

Kumari juice (Aloe vera. juice): take a piece of kumari(Aloe vera) removed the outer part hard and spine area , inner and soft part cut into pieces. Kept in the vessel mix with kadukkai choornam and alow in the corner of the wall for collecting juice after 10 minutes juice is collected.

Fresh Vellai erukkan whole plant collected from erode. It has weight of 20 kg. cleaned by the use of cloth. Then cut into bits .dried in the shade. Burnt in an uruli(steel vessel) into ash. This ash is powdered rubed with kumari juice 100ml in the kalvam. Make into villai dried in the sunlight . Dried cakes subjected to gaja pudam (1000 cow dung cakes) in a pair of agals as per rules.again subjected to another putam if necessary.

Dose: 2 to 4 grains may be given twice a day with honey

Uses: Kasam,swasam, particularly bronchial asthma is relieved.

Dose: 2- 4 grains (130mg to260mg) twice a day with honey.

Uses: kasam, swasam, particularly bronchial asthma is releived.

4.2. STANDARDIZATION OF THE DRUG :

The prepared drug is standardised by the various analysis.

4.2.1. PHARMACOGNOSY ASPECT:

Erukku- Calotropis gigantea (L.) R.Br

Material and methods:

Plants were collected from Erode,Tamil Nadu and identified authentified and certified by Botanist, Siddha Central Research Institute,Chennai-106 and experts of gunapadam department , PG Department,. Government Siddha Medical College, Chennai.

Root, stem, leaf and flower wee fixed in FAA solution (70% ethyl alcohol, formalin and acetic acid in the ratio of 90ml: 5 ml: 5 ml). The materials were left in the fluid for three days, after which they were washed in water and dehydrated with tertiary butyl alcohol. Paraffin wax was in filtered and the specimens were embedded in wax for sectioning.

Alcoholic safranin (0.5%) counter stained with 0.25% fast green. This schedule gave good results for studying the histology of different tissues of the plant organs. All sides, after staining in safranin were dehydrated by employing gaded series of ethyl alcohol(30%, 50%,70%,90% and absolute alcohol) and stained fast green in clove oil and xylol-alcohol(50-50) and passed through xylol and mounted in DPX mountant (Johansen 1940), earing of leaves for studying stomatal number and stomatal index was done by using 5% sodium hydroxide along with chlorinated soda solution supplemented with gentle heat. Quantitative microscopy was carried out and values were determined as per the procedure given in Wallis (1997). Photomicrographs were taken with the help of Nikon Eclipse E200 Microscope.

Macroscopic:

Root: Rough, longitudinally wrinkled and fissured , scars oval and prominent , externally, yellowish white, internally pale, taste mucilaginous, bitter and acrid.

Stem:

Woody, round tender ones covered with soft, loosely apprised, whitish, waxy o sometimes powdery pubescence.

Leaf:

Fleshy, connate – obviate – oblong, with a narrow caudate o often amplexicaule base, 10.0-20.0 cm x 2.5 – 7.5cm, smooth above, cottony below.

Flower:

Regular bisexual arranged in simple or rarely compound cymosely corymbs. Calyx with 5 broadly ovate lobes, corolla gamopetalous creamy white stamens five. Inserted at the base of the corolla, filaments united to form a large stamina column with 5 conspicuous radiating coronal appendages, which laterally compressed with a calcinatory curved spur at the base.

Each anther contains two sacs of pollen mass coiled polonium, attached by slender caulicles to oblong pollen carrier, which is affixed to the attenuated apex. Anthers short, broad, and horny, with triangular another cells cover the sides of the stigmatic hood, pistil bi capillary with separate ovaries. Odour strong, taste bitter.

Microscopic characters

Root:

Transverse section of root shows the outermost cork composed of 15 to 20 or more owes of polyhedral thin walled cells (Fig. 2 A, B & C). A small cubical crystals are presenting a few cells of the inner rows. Thee phloem is distinct and composed of two or three rows of narrow tangentially elongated thin walled cells. The cortex consists of oblong o rectangular thin walled parenchyma cells most of which are loaded with starch grains (Fig.2 B< C), cut ends of the latex tubes are also present. The bast form the broadest part of the bark and consists of a number of broad radial hands of thin walled phloem elements traversed y narrow stips of medullary ayes and laticiferous tubes. Some of the phloem parenchyma cells contain cubical calcium oxalate crystals. The cambium is distinct and consists of 3 o 4 owes of very narrow rectangular cells. The medullary rays are made up of thin walled cubical to oblong cells filled with starch grains .Those situated towards the inside are narrower and radially elongated while those towards the distal potion ae border and tangentially elongated.

The wood is composed mainly of wood parenchyma with sparsely scattered groups in radial rows of large xylem vessels and narrow medullary rays (Fig. 2 D, E). Medullary rays are uni seriate rarely bi or triseriate ; rectangular to polygonal and thick pitted walls filled with starch grains. The xylem parenchyma cells are small in size, thick walled.

Stem: Transverse section of stem is circular in outline. The epidermis is single layered made up of large vertically elongated cells and covered with thick cuticle (Fig.3 L, M). The cortex

is broad and made up of circular to polyhedral parenchyma cells with intercellular spaces (Fig3 M). Group of sclrenchyma fibres are seen in the inner side of the cortex. Pericycle is broad , containing group of undignified fibers (Fig.3 L, N) Xylem and phloem are arranged in the form of a continuous group of enlightened fibers are seen in the inner side of the phloem are arranged in the form of continuous cylinder traversed by narrow medullary rays the vessels are arranged in a row . Intra xylary phyoem universely present at the periphery of the pith in the form of separate strands (Fig.4 O) . Intraxylary phloem is accompanied internally by fibers. Laticiferous canals present. The central region is made up of thick walled, closely arranged spherical parenchyma cells.

Leaf:

Midrib:

Transverse section of midrib shows a flat ad axial surface and convex abaxial surface (Fig.3 H) Epidermis is made up of small rectangular cells covered externally by a thick cuticle. A new epidermal cell elongate to form uniseriate 2 or 3 celled trichomes. The sub epidermal region consists of 3 to 5 layered collenchymas cells .the broad pericycle is marked by separate fiber stands arranged in concentric zones.

Crescent shaped bicollateral vascular bundle bits situated in the centre (fig 3.J).laticifers also present in the phloem and parenchyma zone. The ground tissue bis made up of is diametric to circular parenchyma cells.

lamina:

Dorsiventral; messophyll is differentiated into upper palisade and lower spongy tissue (fig.3 K) . Palisade tissue is made up of elongated closely arranged columnar 3 rows of cells . Spongy tissue is aerenchymatous and made up of radially elongated parenchyma cells laticifers and vascular bundles are seen in this region .the stomatal index is 14 -18 for ad axial epidermis and 9 - 12 for ab axial epidermis .palisade ratio 1-2 and vein islet number 35 -40 (fig. 3 I).

Epidermis in surface view:

Ad axial and abaxial epidermal cells in surface view shows straight anticline walls with striated cuticle showing frequently paracytic stomata sometimes secondarily divided and

a few anisocytic stomata. Isolated or paired cicatrix encircled with radially arranged cells is noticed (fig.2 F,G)

Flower:

Longitudinal section of sepal shows a single layered upper epidermis and loosely packed parenchymatous ground tissue traveled by a row of vascular strands situated underneath the upper epidermis (fig.4 R).some of the parenchyma cells contain rosette crystals of calcium oxalate.

Lower epidermis ois covered with thick cuticle and bears multicellular, uniserate trichomes. Laticiferous tubes are embedded in the central region of the ground tissue.

L.S.of petal shows upper and lower epidermis and lower epidermis covered by a thick cuticle (fig.4 R). Hypodermis parenchymatous containing rosette crystals of calcium oxalate, laticiferous tubes and vascular strands. The ground tissue is aerenchymatous (fig.4 P).

At the apex of the staminal corona, on is periphery, are the polonium which carry the pollen masses (fig.4 Q). T.S. of the coronal appendage consists of outer epidermis penetrating at its frontal edge inside aerenchymatous ground tissue forming a deep U shaped groove crowded with unicellular trachoma at its opening, a vascular strand lies at the base of the groove, laticiferous tubes present throughout the parenchymatous tissue .

POWDER: Shows fragment of cork cells xylem vessels with simple formation bordered pits and reticulate thickenings ; fragments of laticiferous tissue, parenchyma cells ,palisade tissue ,fragment of epidermal cells with paracytic or anisocytic stomata , isolated or paired cicatrix encircled with radially arranged cells sinplew starch grains with a distinct hilum 3 to 10 um in diameter , prism and rosette of calcium oxalate crystals and multicellur uniseriate trichomes, fragments of sepals and aerenchymatous tissue of the petals, coronal appendages and fragments of polonium.

Fig. 1 - plant

Fig. 2 A - T.S. of Root

B - T.S. of Root-enlarged

C - T.S. of Root-showing cork and cortex

D - T.S. of Root-showing xylem, phloem and Medully ray

E - T.S. of Root-central region

F - Ad axial foliar epidermis

G - Abaxial foliar epidermis

Fig.3

H - T.S. OF leaf

I - Vein islets

J - T.S. Of Midrib -enlarged

K - T.S. Of lamina

L - T.S. Of stem – a portion enlarged

M - T.S. Of stem – showing epidermis and cortex

N - T.S. Of stem –showing pericyclic
fibres, phloem and xylem

Fig.4

O - T.S. Of stem –showing intraxylary phloem
fibers and pith

P - T.S. Of flower- upper region

Q - T.S. Of flower –showing stigma, style,
Pollination and corona

R - T.S. Of flower –basal region showing ovary
And ovules.

4.2.1. PHYTO-CHEMICAL ANALYSIS

of Calotropis gigantea.Linn.(White Variety) whole plant *parpam 16.09.2011/4.30 PM*

Phyto chemical tests were carried out the aqueous extracts from the test drug using standard procedures to identify the constituents as described by Sofowara (1993), Tease and Evans(1989) and Harrborne (1973).

MATERIALS AND METHODS: TABLE: 1

Sl. No	**EXPERIMENT**
	Test for Tannins: A test sample 0.5 gm is boiled in 20 ml of water and filtered. The filterate 2 ml is taken and 3-5 drops of $Fecl_2$ (0.1%) is slowly added to it.
II.	**Test for Phlobatannins:** An aqueous 2 ml of test sample is boiled in a hot water bath with 1 ml of aqueous Hcl
III.	**Test for Saponin:** A powdered 2 gm of test sample is boiled with 20 ml of distilled water,then filtered,the filterate is added with fresh 5 ml of distilled water and shaken vigorously.
IV.	**Test for Flavonoids:** An aqueous filterate of test sample is mixed with 5 ml of dilute Ammonium solution and few drops of concentrated H_2SO_4 is slowly added through the sides of the test tube.
V.	**Test for steroids:** An ethonolic extract of testsample 2ml is mixed with 2 ml H_2SO_4 and 0.5 gm Acetic anhydride.
VI.	**Test for Cardiac glycosides:** In 5 ml of test drug Ethanolic extract, 2 ml of Glacial acetic acid, a drop of $Fecl_2$ and 1 ml of H_2SO_4 (slowly on the sides of the test tube) is added.
VII.	**Test for Terpenoids:** In 5 ml of Ethanolic test drug extract, 2 ml of chloroform and 3 ml of concentrated H_2SO_4 (slowly) is added.
VIII.	**Test for Carbohydrates:** An aqueous test drug extract is boiled in a water bath with Benedict's solution.

IX.	**Test for Alkaloids:** Alkaloids are identified by precipitate method a. **Mayer's reagent:** An aqueoustest drug extract of 2 ml is mixed with 2 ml of mayer's reagent b. **Wagner's reagent:** An aqueous test drug extract of 2 ml is mixed with 2 ml of wagner's reagent c. **Dragendroff's reagent:** An aqueous test drug extract of 2 ml is mixed with 2 ml of Dragendroff's reagent.
X.	**Test for Glycosides:** An aqueous test drug extract of 2 ml is added with 1 ml of concentrated Hcl and boiled in a water bath for about 2 hours. The filtrate is separated and 3 ml of chloroform is added, then 10% of 1ml Ammonium solution is added.
XI.	**Test for Protein:** An aqueous extract /alcoholic extract of 2 ml is added with few drops of Biuret reagent and kept in hot water bath for 10 minutes.
XII.	**Test for Phytosterols:** An ethanolic or a methonolic test drug extract 2 ml is mixed with 2 ml of Acetic anhydride stirred well and heated for 2 minutes in hot water bath then allowed to cool.1 or 2 drops of H_2SO_4 is added with the mixture slowly through the sides of the wall .
XIII.	**Test for Phenolic compounds:** About 2 ml of aqueous test drug extract is mixed with 2 ml of $Fecl_3$ solution.
XVI.	**Test for Volatile oil:** An ethanolic test drug extract of 2 ml is mixed with one or two drops of tincture in warm water bath in a screwed cap test tube.
XV.	**Test for Fixed oil:** One ml of ethanolic extract of test sample is mixed with 1 ml of 1% copper sulphate solution and 5 drops of 10% sodium Hydroxide solution

4.2.2. METHODOLOGY FOR BIO-CHEMICAL ANALYSIS

PREPARATION OF EXTRACT OF TEST DRUG:

2 gm of *Calotropis gigantea. Linn white vauety whole plant parpam* is added with 5 gm of Sodium carbonate and taken in a 100 ml clean beaker and added with 20 ml of distilled water . The solution is boiled well for 10 minutes, then it is cooled and then filtered in a 100 ml volumetric flask. The filtrate is called sodium carbonate extract. Then the following tests for the presence of acid radicals, basic radicals and miscellaneous were done.

Calotropis gigantea.Linn white variety whole plant parpam.

CHEMICAL ANALYSIS OF TEST DRUG

SL NO	EXPERIMENT
I.	**Test for acid radicals:**
1.(a)	**Test for Sulphate** 2 ml of the above prepared extract is taken in a test tube. To this add 2ml of 4% Ammonium oxalate solution.
(b)	2ml of extract is added with 2ml of dilute hydrochloric acid until the effervescence ceases off. Then 2ml barium chloride solution is added
2.	**Test for Chloride:** 2ml of extract is added with dilute nitric acid till the effervescence ceases. Then 2ml of silver nitrate solution is added.
3.	**Test for Phosphate** 2ml of the extract is treated with 2 ml of Ammonium molybdate solution and 2ml of concentrated nitric acid.
4.	**Test for Carbonate:** 2ml of the extract is treated with 2ml of magnesium sulphate solution.
5.	**Test for Sulphide:** 1 gm of the substance is treated with 2ml of concentrated Hydrochloric acid
6.	**Test for Nitrate:** 1gm of the substance is heated with copper turnings and concentrated sulphuric acid and viewed the test tube vertically down.
7.(a)	**Test for Fluoride and oxalate** 2ml of the extract is added with 2ml of dilute acetic acid and 2ml of calcium chloride solution and heated.

(b)	5 drops of clear solution is added with 2ml of dilute sulphuric acid and slightly warmed to this, 1 ml of dilute potassium permanganate solution is added.
8.	**Test for Nitrite** 3 drops of the extract is placed on a filter paper. On that, 2 drops a Acetic Acid and 2 drops of Benzidine solution is placed.
9.	**Test for Borate** 2 pinches of the substance is made into paste by using Sulphuric acid and Alcohol (95%) and introduced into the blue flame.
II.	**TEST FOR BASIC RADICALS**
10.	**Test for lead** 2 ml of the extract is added with 2 ml of Potassium iodide solution
11.(a)	**Test for Copper** One pinch of substance is made into paste with concentrated Hydrochloric acid in a watch glass and introduced into the non luminous part of the flame.
(b)	2ml of the extract is added with excess of Ammonia solution
12.	**Test for Aluminium** To the 2 ml of extract. Sodium Hydroxide solution is added in drops to excess.
13(a)	**Test for Iron** To the 2 ml of extract, 2 ml of Ammonium Thiocyanate solution is added.
(b)	To the 2 ml of extract, 2 ml of Ammonium Thiocyanate solution and 2 ml of concentrated Nitric Acid is added.
14.	**Test for Zinc** To the 2 ml of extract Sodium Hydroxide solution is added in drops to excess.
15.	**Test for Calcium** 2 ml of the extract is added with 2 ml of 4% Ammonium Oxalate solution.
16.	**Test for Magnesium** 2ml of extract, Sodium Hydroxide solution is added in drops to excess.
17.	**Test for Ammonium** 2 ml of extract few ml of Nessler's Reagent and excess of Sodium Hydroxide solution are added.
18.	**Test for Potassium** A pinch of substance is treated with 2 ml of Sodium Nitrite solution and then treated

	with 2 ml of Cobal Nitrate in 30% glacial Acetic acid.
19.	**Test for Sodium** 2 pinches of the substance is made into paste by using Hydrochloric acid and introduced into the blue flame.
20.	**Test for Mercury** 2 ml of the extract is treated with 2 ml of Sodium Hydroxide solution.
21.	**Test for Arsenic** 2 ml of extract is treated with 2 ml of silver Nitrate solution
22.	**Test for Starch** 2ml of extract is treated with weak iodine solution
23.	**Test of reducing Sugar** 5ml of Benedicts qualitative solution is taken in a test tube and allowed to boil for 2 minutes and added 10 drops of the extract and again boiled for 2 minutes. The colour changes are noted.
24.	**Test of the alkaloids** 2ml of the extract is treated with 2ml of potassium lodide solution

RESULTS:

The bio-chemical analysis of Calotropis gigantea Linn.White variety, Whole plant parpam, Showed the following chemicals,

Acid radical: sulphate , chloride, carbonate,sulphide

Basic radical: As, Ca, Fe, Hg, K, Mg, Na, P, Pb, S

FTIR: VELLAI ERUKKAN SAMULA PARPAM - IIT

For basic structure related to bonds

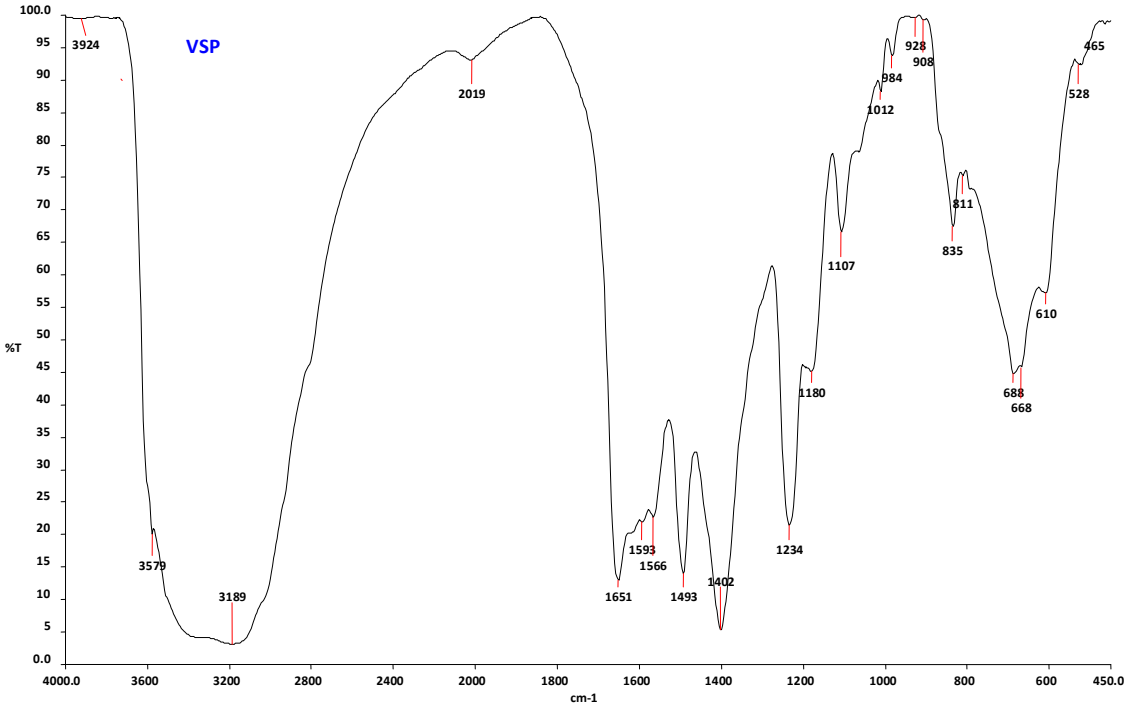
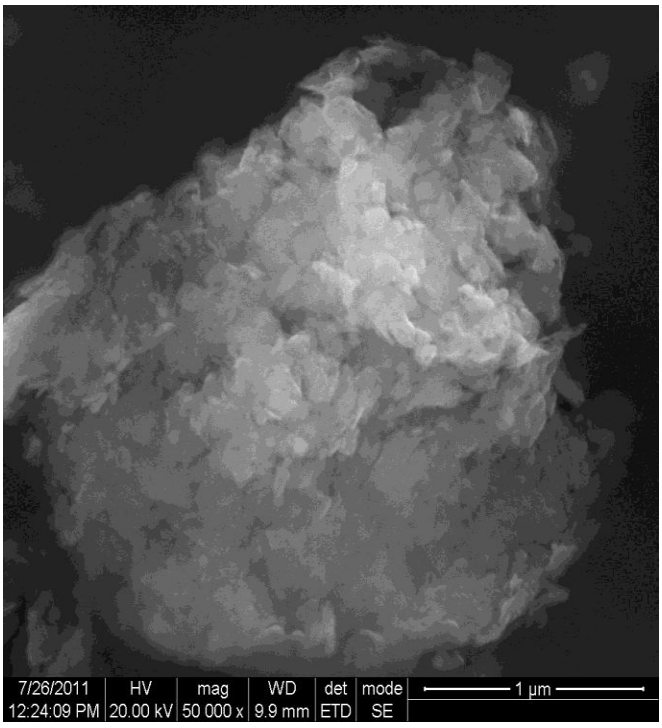


FIG:9

SEM PICTURE OF VELLAI ERUKKAN SAMULA PARPAM- IIT



For particle size analysis.

Fig:10

PERKIN ELMER OPTIMA 5300DV ICP-OES

SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY

IITM, CHENNAI-36

PERKIN ELMER OPTIMA 5300DV ICP-OES

Sample ID	**Analyte**	**Mean**
VSP----------		
	As193.696	BDL
	Ca317.933	174.218MG/L
	Cd 226.502	BDL
	Fe 238.204	30.75mg/L
	Hg 253.652	BDL
	K 766.490	320.15mg/L
	Mg 285.213	28.124mg/L
	Na 589.592	83.348mg/L
	P 213.6617	27.125
	Pb 230.204	BDL

S 181.975 18.235mg/L

BDL=Below detection limit

Table-3 Colour characters of vellerukku samula parpam.

S No	Solvent used	Under ordinary light	Under ultra violet light
1	PPM	Light black	Light black

PPM-powdered plant material

Table -4

Physiocochemical properties of vellerukku samula parpam .

S No.	Parameters	Values obtained (%w/w)	Heavy/ toxic metals	
1	Total ash value	10.21	Lead	BDL
2	Acid insoluble ash	15.23	Cadmium	BDL
3	Water soluble ash	8.54	Mercury	BDL
4	Moisture content	9.16	Arsenic	BDL
5	Foreign organic matter	6.42	Volatile oil	BDL
6	Crude fibre content	18.00		
7	Alcohol soluble extractive	5.6		

8	Water soluble extractive	15.4		

Table -5

Colour, nature and percent yields of extracts of Velerukku Samula Parpam.

S.no.	Extract Solvents	colour	TLC/GC (PEAKS)	Nature	% Yield (w/w)	pH
1	Water	Light black	6	Solid	40	7.1-7.8

Table- 6

Preliminary phytochemical studies on extracts of Vellerukku Samula Parpam.

S.no	Phytoconstituents	Aqueous
1	Alkaloids	+
2	Flavonoids	+
3	Saponins	+
4	Glycosides	+
5	Carbohydrates	+
6	Triterpenoids	+
7	Steroids	+

+ = P.resent, - = Absent

4.2.3.TOXICOLOGOCAL STUDY:

TOXICITY STUDY: ACUTE TOXICITY STUDY

MATERIALS AND METHODS:

Chemicals and reagents use Physiological saline was widely recommended as it is known to be compatible with human tissue, and isotonicity with body fluid. Tyrode solution,Hisatmine (Sigma-Aldrich ChemieGMbH, Germany), Salbutamol (Loba Chemie Pvt. Ltd., India), Dexchlorpheniramine (Loba Chemie Pvt. Ltd., India). All other chemicals used were of analytical grade.

Stock solution

Histamine dihydrochloride (Hi-media) was freshly prepared in normal saline (NaCl, 8.5 g/l), Carboxy methyl cellulose (2%) (Loba chemie Pvt. Ltd). was diluted with distilled water and desired concentrations were prepared. All the prototypes were dissolved in minimum quantity and then the volume was adjusted to 10 ml with normal saline for making the concentration of 50 and 100 μg/ml. The Vellerukku Samoola Parpam was collected from, in Tamilnadu, India. The powdered sample stored in refrigerator. The Vellerukku Samoola Parpam was mixed uniformly in saline solution to achieve 1mg/ml as main stock solution and used in this study.

Animal

Mice of either sex weighing 25-30g and Guinea pigs of either sex 350- 450 were procured from animal house, Department of Pharmacology, Vels University and throughout the study. Animals were fed on conventional diets and water *ad libitum* and they were maintained under standard conditions of humidity, temperature (20-24°C) and light (12-h light: 12-h dark cycle). The rats were randomly assigned to control and different treatment groups, six animals per group. The Institutional Animal Ethics Committee approved the experimental protocol and the conditions in the animal house approved by Committee for Supervision on Experiments on Animals. The study was conducted in accordance with IAEC guidelines (Registration no.XIII/VELS/COL/11/CPCSEA/IAEC/23.09.11). The animals were acclimatized for one week under laboratory conditions.

ACUTE TOXICITY STUDY:

Acute oral toxicity test for the *Vellerukku Samoola Parpam* was carried out as per OECD Guidelines 425 up and down method. Animals are observed individually after dosing at least once during the first 30 minutes, periodically during the first 24 hours, with special attention given during the first 4 hours, and daily thereafter, for a total of 14 days, except where they need to be removed from the study and humanely killed for animal welfare reasons or are found dead.

All observations are systematically recorded and Observations include changes in skin and fur, eyes and mucous membranes, and also respiratory, circulatory, autonomic and central nervous systems, and somatomotor activity and behaviour pattern. Attention was directed to observations of tremors, convulsions, salivation, diarrhoea, lethargy, sleep and coma. The principles and criteria summarised in the Humane Endpoints Guidance Document taken into consideration. Animals found in a moribund condition and animals showing severe pain or enduring signs of severe distress was humanely killed. When animals are killed for humane reasons or found dead, the time of death was recorded.

4.2.4. PHARMACOLOGY STUDY:

A. Bronchodilator activity:

Usage of Guinea pig in this study

The Guinea pig is a species of rodent belonging to the family Caviidae and the genus Cavia. Despite their common name, these animals are not pigs, nor do they come from

Guinea. They originated in the Andes, and studies based on biochemistry and hybridization suggest they are domesticated descendants of a closely related species of cavy such as Cavia aperea, C. fulgida or C. tschudii, and therefore do t exist naturally in the wild. In Western societies, the guinea pig has enjoyed widespread popularity as a household pet since its introduction by European traders in the 16th century. Their docile nature, their responsiveness to handling and feeding, and the relative ease of caring for them, continue to make the guinea pig a popular pet. Organizations devoted to competitive breeding of guinea pigs have been formed worldwide, and odents such as mice and rats. They are still used in research, primarily as models for human medical conditions such as juvenile diabetes, tuberculosis, scurvy, and pregnancy complications. many specialized breeds of guinea pig, with varying coat colors and compositions, are cultivated by breeders. Guinea pig is also used as a metaphor in English for a subject of experimentation; this usage became common in the first half of the 20th century. Biological experimentation on guinea pigs has been carried out since the 17th century; the animals were frequently used as a model organism in the 19th and 20th centuries, but have since been largely replaced by other.

EVALUATION OF ANTI ASTHMATIC ACTIVITY :

Experimental bronchial asthma was induced in guinea pigs by exposing them to histamine. Overnight fasted guinea pigs of either sex were selected and randomly divided in to five groups each consisting of six animals. Group 1 was treated as control, Group 2&3 was treated as test groups received Vellerukku Samoola Parpam at the doses of 250 and 500 mg/kg orally. Group 4 was served as standard received Salbutamol. All the doses were given orally. Prior to drug treatment each guinea pigs were exposed to an atomised fine mist of 2% w/v histamine dihydrochloride aerosol (dissolved in normal saline) using a nebulizer in the histamine chamber. Guinea pigs exposed to histamine aerosol showed progressive signs of difficulty in breathing leading to convulsions, asphyxia and death. The time until signs of convulsion appeared is called pre-convulsion time (PCT) and was determined from the time of exposure to onset of convulsions.

Figure shows the set up for the determination of the pre-convlusive time

As soon as pre convulsion time was noted, animals were removed from the chamber and placed in fresh air to recover. The percentage protection offered by treatment was calculated by using the following formula:

Percentage protection = $(1 - T_1/T_2) \times 100$; Where; T_1 = the mean of PCT of control group animals. T_2 = the mean of PCT of test group animals.

B. Antihistaminic activity:

In-vitro antihistaminic activity

Guinea pig was sacrificed and a segment from ileum (2 cm) was dissected from the terminal ileum and mounted in an organ bath containing Tyrode solution (25ml) between two stainless steel hooks under 0.5g as initial tension was applied to the individual tissue. The tissues were constantly bubbled with air mixture of 95% O_2 and 5% CO_2. The suspended ileum was allowed to equilibrate for 30-45 minutes before adding histamine or Vellerukku Samoola Parpam or the standard drugs. After the initial equilibration period, histamine (10^{-9} to 10^{-4} M) was added to the organ bath and the control concentration-response curve for each one (histamine) was constructed. Each time the added concentration of the histamine was left in contact with the tissues for 60 seconds before adding the next concentration by maintaining 5 min time cycle**.**

Then the tissue was washed two times with Tyrode solution at the interval of 10 minutes. It was left to resume its normal contraction. After a stabilized regular contraction, Vellerukku Samoola Parpam at dose of 80µg/ml was added; dexchlorpheniramine was then added to the organ bath 5 minutes before the corresponding concentration curve was recorded. After rhythmic contraction of the tissue resumed, the control histamine was again added in order to establish the reversible contraction capacity of the tissue and also to test the

subsequent concentration of the Vellerukku Samoola Parpam. The same procedure was repeated Vellerukku Samoola Parpam at different final organ bath concentrations was tested.

Statistical analysis: Data were expressed as Mean ± SEM. Differences between groups were analysed by one way analysis of variance (ANOVA) followed by Dunnet "t" test. Differences were considered significant when $P< 0.05$ and very significant when $P< 0.01$.

4.3. CLINICAL ASSESSMENT:

Clinical trial

Objectives

- To evaluate the bronchodilator effect of **"*Vellai erukkan samula parpam*"**
- To explore the efficacy of Vellai Erukkan samula parpam in patients with bronchial asthma patients.

DESIGN OF THE STUDY

Open Clinical trial phase – 2B

STUDY CENTRE

Govt.siddha medical college and hospital and Arignar Anna Government Hospital of Indian Medicine and Homeopathy, Arumbakkam, Chennai – 106.

STUDY PARTICIPANTS

Both men and women and members of all races and ethnic groups are eligible for this trial. Treatment will be administered on an *inpatient/outpatient* basis. The patients will be selected from the In-patient and Out-patient department of Arignar Anna Government Hospital of Indian Medicine and Homeopathy, Chennai – 106.

NUMBER OF SUBJECTS

Number of participants will be 50.

At the beginning of the study, 10 patients will be treated with a low dose of the drug. If this dose does not cause bad side effects, it will slowly be made higher as new patients take part in the study. A total of 50 patients are the most that would be able to enter the study.

REGISTRATION PROCESS

To register a patient, the following documents should be completed by the investigator.

- Copy of required laboratory tests
- Signed patient consent form
- Other appropriate forms (e.g., Eligibility Screening Worksheet, Registration Form).

The investigator will then verify eligibility and will assign a patient study number, drug dose and register the patient on the study.

CRITERIA FOR INCLUSION

Patients with Bronchial Asthma are eligible for entry to the trial if the following criteria are satisfied.

Co operative patients

The previous drug regimen if any have been with held for 24 hours before the clinical trial.

CRITERIA FOR EXCLUSION

- AIDS
- Malignancy
- Pregnant and lactating women
- Renal diseases
- Cardio vascular disorder
- Age below 6 years

WITHDRAWAL CRITERIA

Patients will be removed from study when any of the criteria listed below applies. The reason for study removal and the date the patient will be removed must be documented in the Case Report Form.

In the absence of treatment delays due to adverse events, treatment may continue for 2 cycles or until one of the following criteria applies:

- Disease progression,
- Deterioration of vital signs with cardiac, respiratory, hepatic, renal and CNS changes.
- Intercurrent illness that prevents further administration of treatment,
- Unacceptable adverse event(s),
- Patient decides to withdraw from the study, or
- General or specific changes in the patient's condition render the patient unacceptable for further treatment in the judgment of the investigator.

ROUTINE EXAMINATION AND ASSESSMENT

The full details of history and physical examination of the patients is to be recorded as per the proforma (form I and I A). The clinical assessment will be done initially at the end of 4 days, 7 days, 14 days and 46 days during treatment and at the end of the 46 days follow up (form II) to be done. The laboratory investigation and the physiological parameters will be recorded initially at the end of the treatment and at the end of follow up as per the proforma (form III).

TRIAL DRUG

VELLAI ERUKKAN SAMULA PARPAM

DOSAGE

2 to 4 grains (130mg to 260 mg) B.D. honey. After meals.

Dose will be fixed after finding the LD50.

DURATION OF TRIAL

Study Period: 7 days to 15 days with 2 months follow up.

Total duration: 3 months

TREATMENT PLAN

DOSAGE

The trial drug "Vellai erukkan samula parpam" will be given in the dose of 130 mg to 260 mg with honey depending upon the severity of the case.

DIET RESTRICTION AND MEDICAL ADVISE

- Patient will be avoid sweet taste foods, water containing vegetables.
- They will be advised to take high protein diet cereals and easily digestive foods.
- Avoid chill exposures and table fans.
- Over eating avoided
- The clinical improvement will be observed and recorded daily in the proforma of case sheet.

TRIAL CONDUCT

This study will be conducted in compliance with the protocol approved by the Institutional Review Board, and according to Good Clinical Practice standards. No deviation from the protocol will be implemented without the prior review and approval of the IRB except where it may be necessary to eliminate an immediate hazard to a research subject. In such case, the deviation will be reported to the IRB as soon as possible.

CLASSIFICATION OF RESULTS

1. **Good Response**
   a. Relief of Symptoms above 75%
   b. Laboratory parameter findings towards normalcy.
2. **Fair Response**
   a. 50% to 75% relief in symptoms.
   b. Significant improvement in laboratory parameter.
3. **Poor Response**
   25% to 49% relief in symptoms and minimal improvement in laboratory parameters.
4. **No Response**
   No relief in symptoms and no significant improvement in laboratory parameters.

FOLLOW UP

Assessment will take for every three days before treatment and after treatment. During this period clinical assessment (form II) and laboratory investigation (form III) will be carried out.

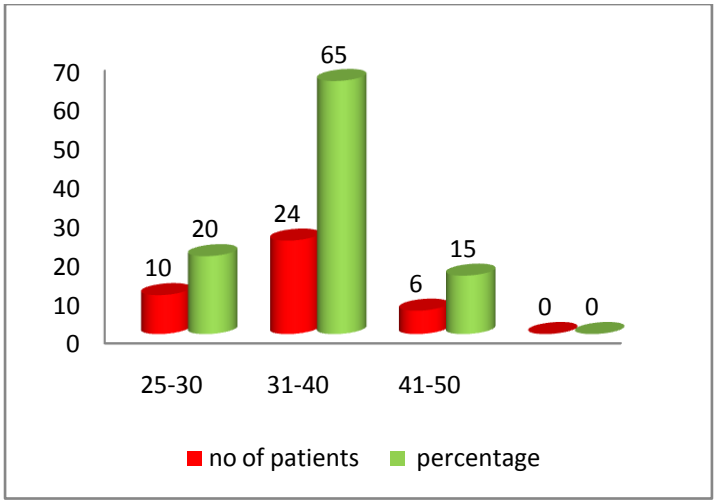
STATISTICAL ANALYSIS

Data were entered using Micro Soft Excel and statistical analysis was done using SPSS for Windows (SPSS v. 11.5 package, SPSS Inc., California, USA). Nominal variables (sex) were expressed as proportions and continuous variables like PEFR, Manikadai nool & Blood parameters, were described as mean and standard deviation. Paired samples‘t’ test was used to find out the statistical significance between the difference in before and after values of various parameters. Statistical significance was set as 0.05 ($p < 0.05$).

The data will be tabulated and analyzed by students ‘T’ test.

Table:4.3.1 AGEWISE DISTRIBUTION

SL.NO	AGE	NO OFPATIENTS	PERCENTAGE (%)
1	25-30	10	25%
2	31-40	24	60%
3	41-50	6	15%



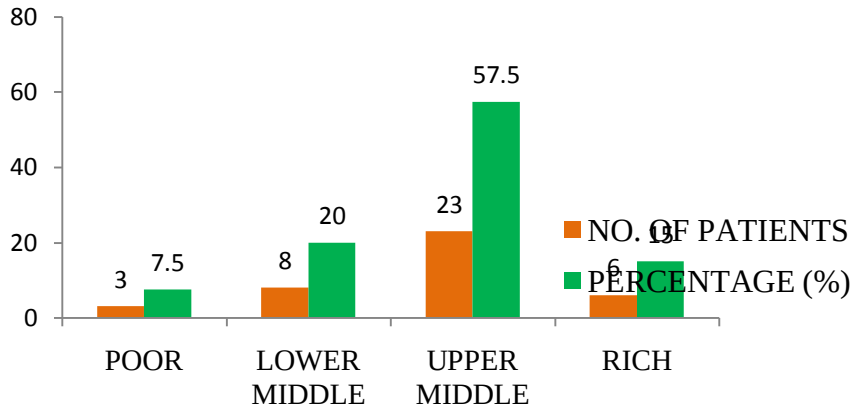
Inference

Among 40 patients,

- 10 patients belongs to the age group of 25-30 years
- 24 patients belongs to the age group of 31-40 years
- 6 patients belongs to the age group of 41-50 years

Table: 4.3.2 **SOCIO-ECONOMIC STATUS**

SL. NO	SOCIO – ECONOMIC STATUS	NO. OF PATIENTS	PERCENTAGE (%)
1	Poor	3	7.5
2	Lower middle	8	20
3	Upper middle	23	57.5
4	Rich	6	15
TOTAL		40	100



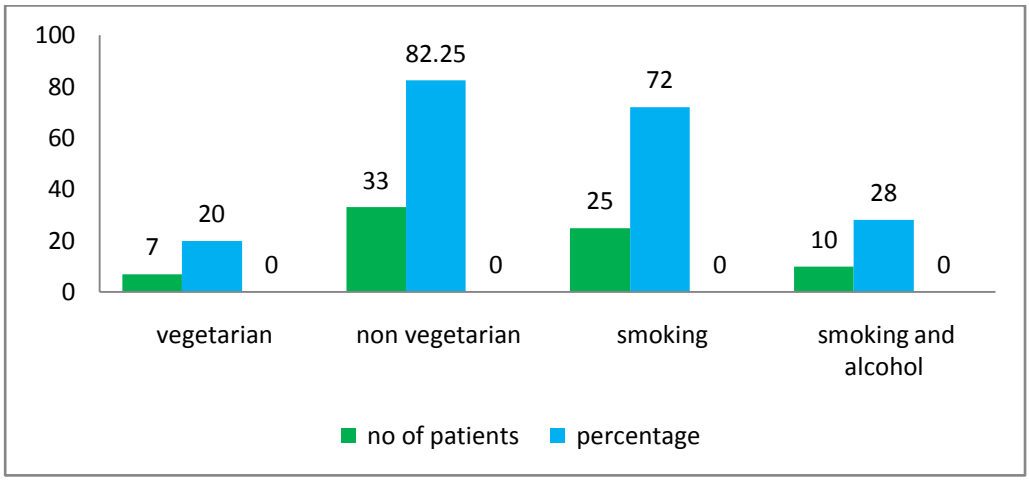
INFERENCE:

Among 40 patients,

- 3 patients were poor.
- 8 patients were lower-middle.
- 23 patients were upper middle.
- 6 patients were rich

Table: 4.3.3 PERSONAL HABITS

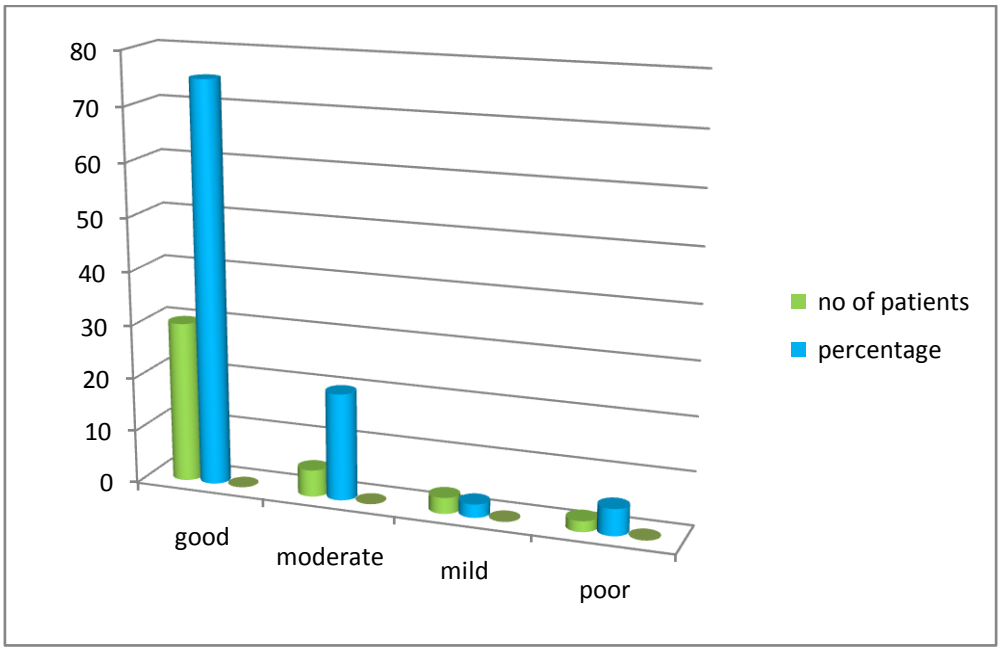
SL. NO	PERSONAL HABITS	NO. OF PATIENTS	PERCENTAGE (%)
1	Vegetarian	7	20
2	Non-vegetarian	33	82.25
3	Smoking	25	72
4	Alcohol&smoking	10	28



GRADATION RESULT

Table: 4.3.5

SL. NO	LEVEL OF IMPROVEMENT	NO.OF PATIENTS	PERCENTAGE (%)
1	Good	30	75
2	Moderate	5	20
3	Mild	3	7.5
4	Poor	2	2.5
TOTAL		40	100



INFERENCE:

Among 40 patients,

- 30 patients were good.
- 5 patients were moderate
- 3 patients were mild.
- 2 patients were poor

RESULTS & DISCUSSION

5. RESULTS AND DISCUSSION:

5.1 PHYTOCHEMICAL ANALYSIS RESULTS:

PHYTO-CHEMICAL ANALYSIS of Calotropis gigantea.Linn.(White Variety) whole plant *parpam 16.09.2011/4.30 PM*

Phyto chemical tests were carried out the aqueous extracts from the test drug using standard procedures to identify the constituents as described by Sofowara (1993), Tease and Evans(1989) and Harrborne (1973). **TABLE:7**

Sl. No	EXPERIMENT	OBSERVATION	INFERENCE
I.	**Test for Tannins:**	Forms a brownish-green or bluish-black colour is not pesent	Absence of Tannins
II.	**Test for Phlobatannins:**	A red precipitate is not occurred	Absence of phlobatannin
III.	**Test for Saponin:**	A permenant or persistant froth is formed.The froth is turned in to emulsion by adding three drops of olive oil.	Presence of saponin
IV.	**Test for Flavonoids:**	Yellow colour formed and disappears on standing.When 1% Alluminium solution is added in this mixture re-formation of yellow colour.	Presence of flavonoids
V.	**Test for steroids**	The solution turns in to blue to green colour	Presence of Steroids
VI.	**Test for Cardiac glycosides:**	A brown ring indicates deoxy sugar of cardenolides/violet ring appears below brown ring/ in acetic acid layer a green ring is	Presence of cardiac glycosides

		formed	
VII.	**Test for Terpenoids:**	A reddish brown interface layer is formed	Presence of Terpenoids
VIII.	**Test for Carbohydrates:**	A green or brick red or red precipitate is not shows	Presence of carbohydrates
IX.	**Test for Alkaloids:** a. **Mayer's reagent:** • **Wagner's reagent:** • **Dragendroff's reagent:**	Forms whitish or yellowish cream colour precipitate Forms a brown or dark reddish precipitate Forms reddish brown precipitate	Presence of alkaloids Presence of alkaloids Presence of alkaloids
X.	**Test for Glycosides:** .	pink colour formation	Presence of glycosides
XI.	**Test for Protein:**	Formation of light blue or Pale violet colour is absent	Absence of protein
XII.	**Test for Phytosterols:**	No greenish blue layer on the upper surface	Absence of phytosterols
XIII.	**Test for Phenolic compounds:**	Formation of deep bluish green colour is absent	Absence of phenolic compounds

XVI.	**Test for Volatile oil:**	Appearance of Red colour .	Prescence of volatile oil
XV.	**Test for Fixed oil:**	Formation of a clear blue solution is absent	Absence of fixed oil

DISSCUSSION: The preliminary phyto chemical analysis of vellai erukkan samula parpam (Calotropis gigantea.Linn)

1.saponin

2.Flavanoids

3.Steroids

4.Cardiac glycosides

5.Terpinoids

6.and alkaloids

As per results the drug have saponoin like action that is it may be produced steroidal activity and triterpinoidal activity simultaneously. Steroid type of action gives smooth muscle relaxant so it eleivs from congestion and tightness of thw chest in bronchial asthma.

Cardiac glycoside produce the protective effect of the heart and give guard to the heart function.

Flavanoid contain of this drug give antioxidant effect to the body and boost general health of the body. It also raises the immunity of the body. so the drug may act as a kayakarpam type.

Alkaloid content of this plant may have the active principle and accompanied work with steroid content of the plant.

So the organic steroid, flavanoid, and alkaloid content of the plant having important role for the therapeutic activity of bronchodilator in bronchial asthma.

5.2.CHEMICAL ANALYSIS OF TEST DRUG TABLE:8

SL NO	EXPERIMENT	OBSERVATION	INFERENCE
I. 1.(a)	**Test for acid radicals:** **Test for Sulphate** .	Absence of White Precipitate	Absence of sulphate
(b)		Presence of White Precipitate	Presence of sulphate
2.	**Test for Chloride:**	presence of white precipitate	Presence of chloride
3.	**Test for Phosphate** .	Yellow Precipitate is not obtained.	Absence of phosphate
4.	**Test for Carbonate:**	Presence of white precipitate	presence of carbonate
5.	**Test for Sulphide:**	Presence of Rotten egg smelling	Presence of sulphide
6.	**Test for Nitrate:**	Absence of reddish brown gas.	Absence of nitrate
7.(a)	**Test for Fluoride and oxalate** .	White precipitate is not obtained	Absence of Fluride and oxalate
(b)		Absence of KMNO4 solution discolourisation.	

8.	**Test for Nitrite**	Absence of yellowish red colour	Absence of nitrite
9.	**Test for Borate**	Absence of Green tinged flame	Absence of borate
II.	**TEST FOR BASIC RADICALS**		
10.	**Test for lead**	Absence of Yellow precipitate	Absence of lead
11.(a)	**Test for Copper**	Bluish green coloured flame is not obtained.	Absence of copper
(b)		Absence of deep blue	Absence of copper
12.	**Test for Aluminium**	Absence of White precipitate.	Absence of aluminium
13(a)	**Test for Iron**	Blood red colour is obtained	Presence of Iron
(b)		Blood red colour is obtained.	Presence of iron
14.	**Test for Zinc**	Absence of White precipitate	Absence of zinc
15.	**Test for Calcium**	White precipitate is obtained.	Presence of calcium
16.	**Test for Magnesium** .	Presence of White precipitate.	Presence of magnesium

17.	**Test for Ammonium**	Reddish brown precipitate is not obtained	Absence of ammonium
18.	**Test for Potassium** .	Presence of Yellow precipitate	Presence of potassium
19.	**Test for Sodium**	Presence of Yellow colour flame	Presence of sodium
20.	**Test for Mercury**	Presence of yellow precipitate	Presence of mercury
21.	**Test for Arsenic**	Presence of Yellow precipitate.	Presence of arsenic
22.	**Test for Starch**	Absence of Blue colour .	Absence of starch
23.	**Test of reducing Sugar**	Green colour is not obtained.	Absence of reducing sugar
24.	**Test of the alkaloids**	Red colour not developed	Absence of alkaloids

RESULTS:

The bio-chemical analysis of Calotropis gigantea. Linn.White variety. Whole plant parpam. showed the following chemicals,

Acid radical: sulphate ,chloride, carbonate,sulphide

Basic radical: As,Ca, Fe,Hg,K,Mg, Na, P, Pb,S

DISCUSSION:

Calcium is known primarily for its function as the main mineral component of bones. But calcium has other important functions, some of which are pertinent to asthma. In the presence of calcium, ATPase is activated to hydrolyse ATP and provides an available energy source for muscle contraction.

When asthmatics are put on intravenous fluid repletion in an emergency room situation, potassium is the first component. Magnesium is essential in muscle relaxation after contraction.

Magnesium also plays a key role in the production of energy which is needed by the chest wall muscles and the diaphragm to perform the work of breathing. In a double blind study, individuals with low magnesium levels had an increase in the power of their respiratory muscles after receiving an intravenous infusion of magnesium.It is generally thought that magnesium depletion leads to respiratory fatigue. Magnesium promotes healthy lung function by acting as a bronchodilator, preventing the bronchial passages from going into spasm. Magnesium deficiency may increase vulnerabilty to allergies by increasing the release of histamine into the bloodstream, increasing allergic reactivity in general. Magnesium has been found to be deficient in many asthmatics during acute attacks, though actual Mg levels may have been lower since blood level measurements do not detect subtle tisssue deficiencies. Low dietary intake of magnesium is associated with an increased incidence of asthmatic symptoms, wheezing and reduced lung function.

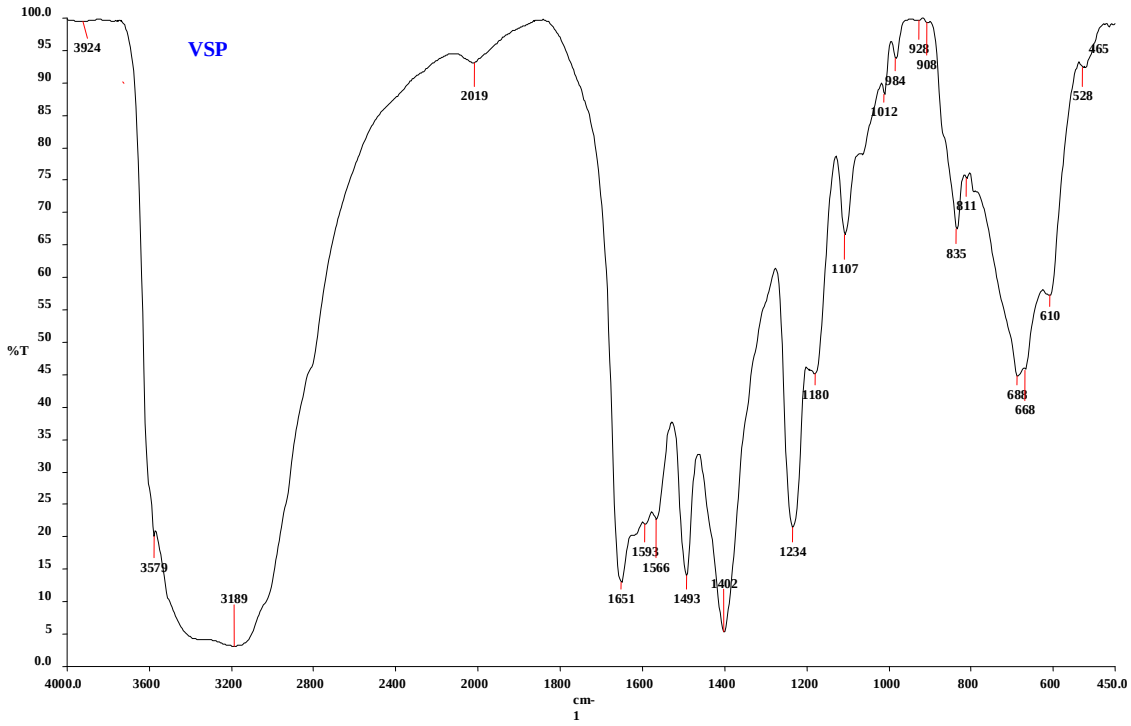
The administration of intravenous magnesium has been shown to be effective in the treatment of bronchial asthma symptoms.In my drug ca 174.218mg/L, K 320.15mg/L,Mg 28.124mg/L

Potassium is so high in my drug so it act above said mechanism .calcium and magnesium also helpful to the respiatoy muscles by the way of give strength that muscles.

In my drug contain Fe 30.75mg/L it give the general boost to the body.

As, hg, pb, and cd the four heavy metals are not present in my drug i.e. in the BDL level so it have no harm to the body .

5.4 FT IR: RESULT



3924 ,3579 – the two peak comes under OH

3189 – OH (3160-3640)

1593 – amines NH (1650- 1580)

1234- CN

984-Alkane

610- CH

In this study above the bond stuctue are present in the test drug. The drug's activity is based on this bond position.

5.5 SEM PICTURE OF VELLAI ERUKKAN SAMULA PARPAM FIG :9

In the sem picture the drug particle size in nano level .50.000 magnification in the 1µm there are 200 to 300 particles present. So the drug having nano particle size.

PRECLINICAL

Table 1: Dose finding experiment and its behavioral Signs of Toxicity

No	Dose mg/kg	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.	500	+	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
2	1000	+	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
3	2000	+	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
4	5000	+	-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-

1. Alertness 2. Aggressiveness 3. Pile erection 4. Grooming 5. Gripping 6. Touch Response 7. Decreased Motor Activity 8. Tremors 9. Convulsions 10. Muscle Spasm 11. Catatonia 12. Muscle relaxant 13. Hypnosis 14. Analgesia 15.Lacrimation 16. Exophthalmos 17. Diarrhoea 18. Writhing 19. Respiration 20. Mortality

The acute toxicity of Vellerukku Samoola Parpam was not occurred at 2000mg/kg (asper the OECD - 425) on mice but negligible toxic symptom like mild diarrhoea, wasobserved after 48 hours of oral drug treatment at the dose level of 5000 mg/kg andtotal duration of study was 14 days. Hence, one-tenth and one twentieth dose was selected as therapeutic dose from maximum tolerable dose from toxicity study. Histamine induced bronchoconstriction is the traditional immunological model of antigen induced airway obstruction. Histamine when inhaled causes hypoxia and leads to convulsion in the guinea pigs and causes very strong smooth muscle contraction, profound hypotension and capillary dilation in the cardiovascular system. A prominent effect caused by histamine is severe bronchoconstriction in the guinea pigs that causes asphyxia and death. Histamine is released after degranulation of mast cell by an antigen exposure by antigenic stimulation causing smooth muscle

contraction, increased vascular permeability and mucus formation. Histamine is one of the important mediator of allergy, inflammation and bronchoconstriction.

Histamine was released from mast cells and basophiles by antigenic stimulation causing smooth muscle contraction, increased vascular permeability and mucus formation. Histamine can provoke broncho-constriction, it may also be responsible for bronchial hypersensitivity which is a common feature of asthma. Mast cells with their mediator can be regarded as centre for initiation and mediation of early phase of allergic reaction and may be responsible for initiation of chronic allergic reaction.

Targeting histamine, either prevention of its release from mast cell or use of histaminergic receptor antagonist becomes part of antihistaminic therapy in allergic diseases. In vivo study of Vellerukku Samoola Parpam have been also shown the significant increase in pre-convulsion time due to pre-treatment with Vellerukku Samoola Parpam at the dose of 250 and 500 m/kg of body weight of guinea pigs, when the guinea pigs were exposed to histamine. The results of Vellerukku Samoola Parpam suggested that it is effective in reducing the symptoms of bronchial asthma and also improve the lung function parameters of asthmatic subjects.

In the present study, guinea pigs were used because of the extreme sensitivity of their airways to the primary mediators of bronchoconstriction, including histamine and leukotrienes and their ability to be sensitized to foreign proteins. Asthma is a complex inflammatory disease causes airway narrowing and associated with changes in the levels of eosinophils, mast cells, lymphocytes, cytokines and other inflammatory cell products. It is well known that patients with asthma have high levels of specific IgE that binds to receptors of mast cells and other inflammatory cells. It is important to emphasize that the mechanism involved in asthma condition is more complex than the model used in our assay. Nevertheless, the bioassay models used in these experiments give a good insight into the justification of the traditional use of the plant for the management of asthma.

Interaction between IgE antibody and antigen results in the activation of a series of inflammatory cellular reactions, including the release of mediators such as histamines, prostaglandins and leukotrienes, which subsequently lead to contraction of airway smooth muscle and bronchoconstriction. Asthma is a common disease that is rising in prevalence worldwide, with the highest prevalence in industrialized

countries. Asthma affects about 300 million people worldwide and it has been estimated that a further 100 million will be affected by 2025.

Since 1970s, the global prevalence, morbidity, mortality, and economicburden of asthma have increased particular in children. Medicinal plant used for the treatment of asthma should have anti-inflammatory, immunomodulatory, antihistaminic, smooth-muscle relaxants and allergic activity. According to Ayurveda and siddha systems of medicine, anti-asthmatic drug should have properties such as anti-kapha and antivata. Antioxidant supplements are effective in reducing bronchoconstriction severity by inhibiting pro-inflammatory events as a result of neutralizing the effects of excess reactive oxygen species and reactive nitrogen species.

Current asthma therapy lack satisfactory success due to adverse effect, hence patients are seeking complementary and alternative medicine to treat their asthma. Histamine when inhaled has been shown to induce bronchoconstriction by direct H1-receptor activation and also by a naturally mediated bronchoconstrictor effect via vagal reflexes. Although there are various model of asthma, guinea pig airways react to histamine, acetylcholine, leukotrienes and other bronchoconstrictors in a manner similar to that seen in humans.

Another similarity between the guinea pig model and asthmatic patients is that enhanced bronchoconstriction occurs in both species following sensitization, in response to β-adrenergic antagonists. Thus, the guinea pig model resembles the human allergic pathology in several aspects, especially in terms of mediator release. Histamine antagonists can be conveniently recognized and assayed by their ability to protect guinea pigs against lethal effects of histamine-induced bronchospasm.

Pharmacological study

Histamine when inhaled has been shown to induce bronchoconstriction by direct H_1-receptor activation and also by a naturally mediated bronchoconstrictor effect via vagal reflexes. In the present study, Vellerukku Samoola Parpam (250, 500 mg/kg) significantly protected the Guinea pigs against histamine-induced bronchospasm. The guinea pigs exposed to histamine aerosol showed signs of progressive dyspnoea leading to convulsions. The Vellerukku Samoola Parpam significantly prolonged the latent period of convulsions (PCT) as compared to control following the exposure of histamine aerosol. The action started after 1 h of

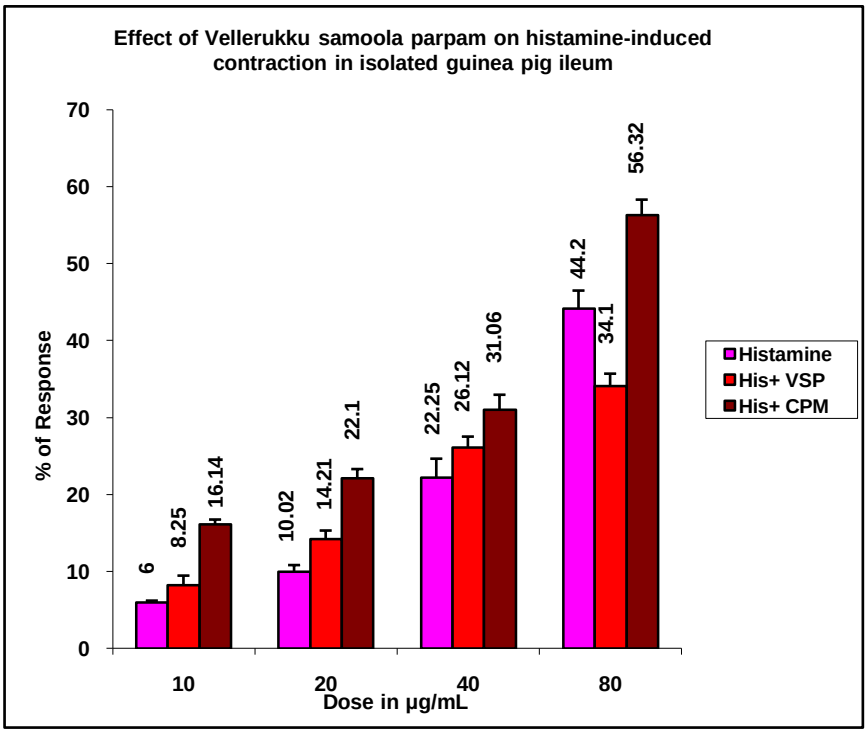
drug administration. The antihistaminic drug Chlorpheniramine maleate used in the study produced a significant increase in the latent period of convulsion after 1 h. Therefore, the result of present study indicates the utility of the Vellerukku Samoola Parpam in antihistaminic activity. The results of present study suggested that Vellerukku Samoola Parpam significantly protected the Guinea pigs against histamine-induced bronchospasm. Vellerukku Samoola Parpam use traditionally in the management of asthma is justified.

Thus, our findings suggest that Vellerukku Samoola Parpam possess significant antihistaminic (H_1 receptor antagonist) activity. Further studies are needed for exact molecular mechanism of action and also to isolate and characterize the active constituent for its activity.

Table 2: Effect of Vellerukku samoola parpam on histamine-induced contraction in isolated guinea pig ileum

Sr. No	**Dose**	**Percent of maximum response**		
		Histamine alone	**Histamine+ Vellerukku samoola parpam (1mg/ml)**	**Histamine+ Chlorpheniramine (1mg/ml)**
1	10 µg/mL (0.1ml)	6.00±0.29	8.25±1.20	16.14 ± 0.86**
2	20 µg/mL(0.2ml)	10.02±0.87	14.21±1.12*	22.10 ± 1.44**
3	40 µg/mL (0.4ml)	22.25±2.10	26.12±1.24ns	31.06 ± 1.98**
4	80 µg/mL(0.8ml)	44.20±2.18	34.10±1.36**	56.32 ± 2.00**

Values are expressed in mean±SEM, *p< 0.05; **p< 0.01 compared with histamine alone (36mm as 100%); n=3.



Groups	Treatment and Dose	Pre-convulsion time in Seconds			
		Before	1 hr.	2hr.	4hr.
Control	Normal Saline	128.2±2.17	110.3±2.05	86±2.46	118.0±2.45
Test 1	Vellerukku samoola parpam 250mg/kg	122.4±2.09	174.2±2.10**	210.5±2.56**	158.3±2.10**
Test 2	Vellerukku samoola parpam 500mg/kg	126.8±2.12	190.6±2.17**	235.2±3.41**	170.9±2.46**
Standard	Salbutamol 5mg/kg	125.1±2.10	347.3±3.00**	379.8±4.68**	212.4±3.55**

Table-3. Effect of Vellerukku samoola parpam on histamine induced bronchoconstriction in Guinea pigs.

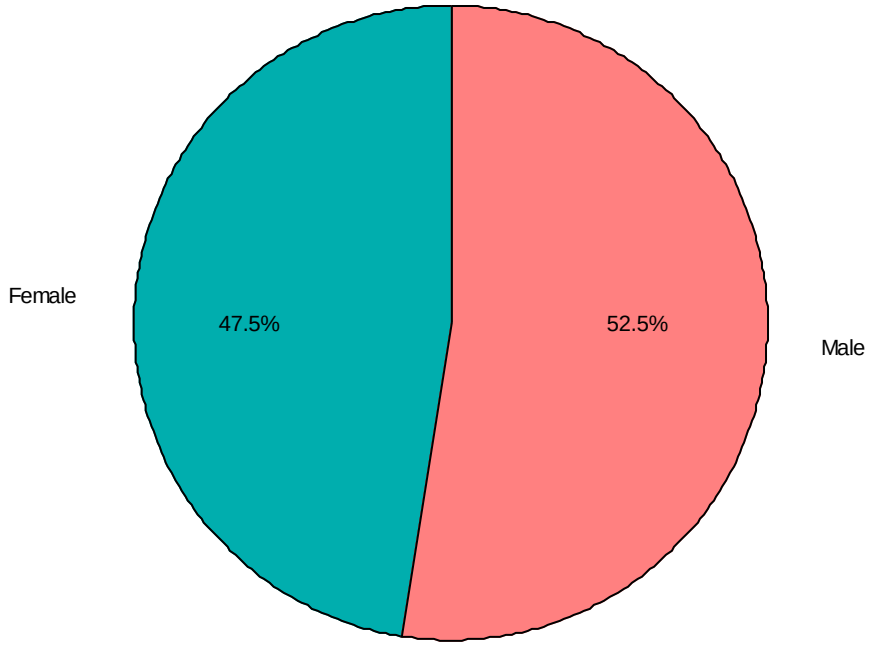
Values are in mean ± SEM; Statistical analysis done by using One-way ANOVA followed by Dunnet 't'-Test.

**$p<0.01$, compared to control; n=5; control = histamine (0.2%, aerosol).

Clinical study:

Sex distribution of study participants

N = 40



Descriptive Statistics

Factors	N	Mean	Std. Deviation	Minimum	Maximum
Age	40	43.83	17.636	6	80
Wheezing days before treatment	40	176.53	154.039	7	720
Wheezing days after treatment	40	14.10	5.588	3	30

Chest tightness days before treatment	40	32.67	26.065	5	120
Chest tightness days after treatment	40	14.45	19.563	3	120
Dyspnea days before treatment	40	16.10	7.585	0	30
Dyspnea days after treatment	40	7.13	3.660	0	15
Other complication days before treatment	40	55.75	41.084	0	180
Other complication days after treatment	40	12.25	6.671	0	20
Total white cell count before treatment	39	9564.10	630.158	7900	10800
Total white cell count after treatment	40	9385.00	493.834	8000	10400
Polymorphs before treatment	39	56.97	3.565	52	66
Polymorphs after treatment	39	57.41	3.932	52	71
Lymphocytes before treatment	39	36.51	3.641	30	43
Lymphocytes after treatment	39	38.08	3.157	31	45
Eosinophils before treatment	40	6.50	2.219	2	10
Eosinophils after treatment	40	5.50	2.828	2	20
ESR at 30 mints before treatment	39	11.69	5.177	3	33
ESR at 60 mints before treatment	39	24.08	10.406	9	65
ESR at 30 mints after treatment	40	8.77	3.372	2	20
ESR at 60 mints after treatment	39	17.03	6.081	6	35
Hemoglobin before treatment	39	10.762	1.5890	7.0	14.6
Hemoglobin after treatment	39	11.559	1.4807	9.0	15.0
Sugar before treatment	40	100.30	17.180	28	138
Sugar after treatment	39	99.90	12.197	73	130
Urea before treatment	40	27.45	4.385	18	40
Urea after treatment	38	27.34	3.559	20	38
Creatinine before treatment	40	.855	1.2467	.4	8.5
Creatinine after treatment	40	.645	.1011	.4	.8
Manikadai Nool before treatment	40	8.669	.4289	8.0	9.5
Manikadai Nool after treatment	40	9.36	.449	9	10
PEFR before treatment	40	242.00	79.782	80	450
PEFR after treatment	39	323.33	76.857	140	500

Signs & Symptoms	N	Mean	Std. Deviation	Std. Error Mean	t	Df	Sig. (2-tailed)
Wheezing days before treatment	40	176.53	154.039	24.356	6.781	39	< 0. 001
Wheezing days after treatment	40	14.10	5.588	.883			
Chest tightness days before treatment	40	32.67	26.065	4.121	4.280	39	< 0. 001

Chest tightness days after treatment	40	14.45	19.563	3.093			
Dyspnea days before treatment	40	16.10	7.585	1.199	10.569	39	< 0. 001
Dyspnea days after treatment	40	7.13	3.660	.579			
Other complication days before treatment	40	55.75	41.084	6.496	7.221	39	< 0. 001
Other complication days after treatment	40	12.25	6.671	1.055			
Total white cell count before treatment	39	9564.10	630.158	100.906	2.967	38	0.005
Total white cell count after treatment	39	9384.62	500.283	80.109			
Polymorphs before treatment	38	57.03	3.598	.584	-1.071	37	0.291
Polymorphs after treatment	38	57.42	3.984	.646			
Lymphocytes before treatment	38	36.45	3.666	.595	-4.803	37	<0.001
Lymphocytes after treatment	38	38.05	3.196	.518			
Eosinophils before treatment	40	6.50	2.219	.351	2.251	39	0.030
Eosinophils after treatment	40	5.50	2.828	.447			
ESR at 30 mints before treatment	39	11.69	5.177	.829	3.114	38	0.003
ESR at 30 mints after treatment	39	8.94	3.229	.517			
ESR at 60 mints before treatment	38	23.00	8.047	1.305	6.653	37	<0.001
ESR at 60 mints after treatment	38	17.32	5.882	.954			
Hemoglobin before treatment	38	10.834	1.5433	.2504	-2.971	37	0.005
Hemoglobin after treatment	38	11.484	1.4240	.2310			
Sugar before treatment	39	100.36	17.400	2.786	0.303	38	0.764
Sugar after treatment	39	99.90	12.197	1.953			
Urea before treatment	38	27.55	4.440	.720	0.552	37	0.584
Urea after treatment	38	27.34	3.559	.577			
Creatinine before treatment	40	.855	1.2467	.1971	1.059	39	0.296
Creatinine after treatment	40	.645	.1011	.0160			
Manikadai Nool before treatment	40	8.669	.4289	.0678	-15.351	39	<0.001
Manikadai Nool after treatment	40	9.36	.449	.071			

PEFR before treatment	39	243.08	80.530	12.895	-10.159	38	<0.001
PEFR after treatment	39	323.33	76.857	12.307			

Paired Samples‘t’ test

From the above details, the clinical study reveals that 75% of patient marked relief, 20% moderate relief and also stastical analysis by paired sample ‘t’ test shows very significant before and after treatment.

In siddha aspect

The trial drug has Pungent, bitter and sweet taste.The potency of the drug is Hot and Bio transformation of the drug is pungent. As per the siddha concept,

‘‘கபத்தினாலன்றி காசசுவாசம் காணாது’’

–தேரையர் பிணிமுதற் காரணம்-வெண்பா

Eraippirumal occurs due to the derangement of the kabha humour.

‘‘காரந் துவர்கசப்புக் காட்டுஞ் சுவையெல்லாம்

சாரப் பரிகாரஞ் சாற்று’’

-கண்ணுசாமியம்

The properties of pungent taste are decreases the kabha humour, increases the vatha and pitha humour. It relieves throat congestion. Properties of hot potency are decreasing the kabha, neutralize the vatha humour and regulate the digestion. By giving this drug it normalise the deranged humours and reduces the signs and symptoms.

CONCLUSION

6. CONCLUSION

Vellai erukkan botanically identified as calotropis gigantea lr, white vaiety is a common medicinal drug in siddha'

From the above studies, it has been concluded that the drug (vellai erukkan samulka parpam) has antihistamine and bronchodilator effects in all swasa kasam cases without any adverse effects.

SUMMARY

7. SUMMARY

Vellai erukkan samulam was collected in erode and purified and dried in sunshade and make into ash and make *a gajapudam* and stored in the airtight container. This drug was subjected for various studies by the author.

Vellai erukkan samula parpam was selected for this study to establish the action on *swasa kasam.*

To collect information about the drug, various text books, literature the title were referred. From them, the authour came to an idea about the drug and its efficacy on *swasa kasam.*

A brief description in botanical aspect of *vellai erukkan samula parpam* ,its identifying characters and phytochemical datas given.

The wide use of *vellai erukkan samula parpam* according *to gunapadam* aspect as well as in various siddha literature were discussed with much importancde to that of preparation related to anti *kapha* properties. Chemical analysis of the drug shows that it is soluble in hcl. Qualitative analysis revealed the presence of calcium, iron are important in respiratory diseases.

The pharmacological analysis is showed that the drug has got significant anti histamine and bronchodilator activity action.Clinical studies of 50 patients diagnosed as swasa kasam according to siddha aspect as well as laboratory investigation and peak flow meter reading of both sex selected. They were treated as both out patient and inpatient . All the patients received vellai erukkan samula parpam in a dose 100mg twice a day with honey after meals.

It revealed that the test drug possess good relief. Moderate relief and mild relief. During the clinical trail all the patients receiving vellai erukkan samula parpam has no complaints of adverse effects.

PART-2

PART-2

ANTI-CANCER ACTIVITY OF GURU PATHANGAM

1. INTRODUCTION

"உள்ளம் கோவில் ஊண் உடம்பு ஆலயம்"

உடம்பால் அழியில் உயிரால் அழிவர்
திடம்பட மெய்ஞானம் சேரவும் மாட்டார்
உடம்பை வளர்க்கும் உபாயம் அறிந்து
உடம்பை வளர்த்தேன் உயிர் வளர்த்தேனே

- திருமந்திரம்

என்பது சித்த மருத்துவத்தின் அடிப்படை.

குரு : குரு மருந்து என்பது முதன்மையான மருந்தாகும்

Universal medicine , it is a reputed medicine of high potency , capable of curing radically all ailments; and as such deserves to be called , king of medicine; it was held by siddhars school of thought that a medicine , capable of transmuting inferior metals into gold is the only sovereign remedy (panacea) for curing radically all diseases in the human system on account of its all healing virtues hence the necessity had risen for the incorporation of alchemical processes for preparing such remedies , in the tamil siddha works on medicine .

So, the several methods contemplated in siddhar's alchemy such as, absorbtion calcinations, destruction ,consolidation or concentration amalgamation , distillation, *sublimation*, alkalization , cupellation, animation or vivification, augmentation, etc., have to be adopted according to the nature of medicine required for a particular disease. The several universal medicines described in the tamil siddha works on alchemy together with their tests and qualities are mentioned be low as far as known and a briefly as possible:-

According to *Bogar (7000):-*

1. Vermilion quintessence- added to white alchemical copper (an alloy of silver) in the proportion of 10:1 gold of 6 Matru can be obtained.

2. mercuric chloride quintessence – purifies copper from its verdigris and eradicates all kinds of rheumatism (80) from the human system.

3. common salt quintessence – added to nine metals in the proportion of 50:1 gold of 6 Matru is arrived at .It removes grey hairs and wrinkles of the skin ; and re ndes the body red like copper.

According to *konganawa's* works(3000) on alchemy:-

1. copper quintessence – added to silver in the proportion of 10:1 yields gold of 8 Matrus. Cures all ailments of the body; and invigorates the human system.
2. diamond quintessence – consolidates mercury, renders the human body hard and stong like a stone pillar; and promotes spiritual success leading towards emancipation.

According to *satta muni* works (1000) on Alchemy:-

1. Zinc quintessence – given to white alchemical copper in the proportion of 10:1, gold of 8 Matru is obtained.
2. Mercury quintessence – given to lead in the proportion of 100:1, refined silver is obtained.

When a computation is made a grain of this Philosopher's powder converts as many hundreds and thousands of gains of impure and volatile metal which is obliterate by fire into true gold . this powder when added to different metals or metallic compounds enumerated above preserve the product after transmutation eternally from rust, putrefaction and toture of fire, however violent it may be ; and makes it a gold of vigin puity. It is the only remedy that cures every diseases to its fullest extent; and makes one regain his beginnings, however old he may have become by his age.

Matru (மாற்று) is the degree of fineness of gold corresponding to 'carats' in English . the pure standard gold is only 10 matu or 24 carats; and so gold beyond this

fineness is unknown to the world . it is only alchemical gold (jq;fr;nrk;G) that is said to be obtained from above 10-1000 Matru ; and no one has seen this . It must vay in colour , appearance , weight , specificgravity etc. the process of making this kind of gold though a mystery, was well –known only to siddhars.

Quintessence is the fifth essence of the ancient and mediaeval philosophy ,supposed to be the substance of which the heavenly bodies were composed ; and to be actually latent in all things. It is the most essential of any substance ; and is considered to be the purest and most refined essence or extract of its kind.

Every physician in olden days was obviously an alchemist or the son of the an alchemist; and so the proverb runs

"வாதி மகன் வைத்தியன்"

பதங்கம் : மருந்தை எரிப்பதனால் மேற்படிந்த வஸ்து இவ்வாறு அழைக்கபடும்.

The process of sublimation by which solid substances such as camphor sulphur,impure subchloride of mercury,corrosive sublimate, benzoin etc., are brought into the state of vapour by heat and condesed again into a solid by cold without melting them;

- tvs sambasivam pillai dictionay 122-V

Cancer is a general term applied to a series of malignant diseases which may after many different parts of the body. These diseases are characterized by a rapid and uncontrolled formation of abnormal cells which may mass together to form a growth or tumour , or proliferate though out the body, initiating abnormal growth at other sites. If the process is not arrested , it may progress until it causes the death of the organism. Cancer is commonly encountered in all higher animals, and plants also develop growths that resemble cancer

Cancer is a group of more than 100 diseases characterized by unlimited cell division, invasion to nearby tissues and metastasis to distant organ, résistance to anti-

growth, evasion to apoptosis and sustained angiogenesis. Normal body cells grow, divide and die in an orderly more rapidly until the person becomes an adult, after that, cells in most parts of the body divide only to replace worn out or dying cells and to repair injuries. Cancer cells continue to grow and divide. Instead of dying, they outlive normal cells and continue to form new abnormal cells.

Cancer can affect any part of the body, cancer usually forms as tumor, some cancers like leukemia, do not form tumors .instead these cancer cells invole the blood and blood forming organs. Often cancer cells travel to other parts of the body where they begin to grow and replace the normal tissue. This process is called metastasis. Cancer is the leading cause of death world wide according to reported date, out of total 58 million deaths worldwide in 2005, cancer accounts for 7.6 million or 13% of all deaths more than 70% of all death in 2005 occurred in low and middle in some countries death forms cancer in the world are projected to continue rising with an estimed 9 million people dying from cancer in 2015 and 11.4 million dying in 2030.

Cancer is characterized by uncontrolled division of cells and the ability of cancerous cells to invade other tissues, either by direct growth into adjacent tissue, through invasion or by implantation into distant sites by metastasis. Metastasis is defined as the stage in which cancer cells are transport ed through the bloodstream to sites far removed from the original site. Cancer is the leading cause of death in many countries today , exceeded only by heart diseases. It is one of the principal causes of death in developed countries.

Oral cancers represent a disparate group of tumours with diverse clinical behaviour. Surgery, in association with radiotherapy, is mainstay of treatment for advanced oral cancers.Results of chemotherapy alone in advanced head and neck cancers per se have not been very promising but induction and concomitment chemotherapy do have a ole in organ preservation.

Increasing attention has been given in recent years to the importance of quality of life (QOL) in assessing outcomes of patients treated fo head and neck (H and N) cancers .QOL is a multidimensional construct capturing the subjective

wellbeing of patients in physical , emotional , functional and social domains. Although theapeuticoptions may provide similar survival rates , QOL outcomes between treatment treatment modalities may vary significantly. It is therefore ideal for pretherapydiscussions to include consideration of optimal post-therapy QOL outcomes.

The main forms of treatment for cancer in humans are surgery , radiation and drugs (cancer chemotherapeutic agents). Cancer chemotherapeutic agents can often provide temporary relief of symptoms the prolongation of life, and occasionally cures. in recent years , a lot of effort has been applied to the synthesisof potential anticancer drugs. Many hundreds of chemical variants known classes of cance chemotherapeutic agents have beensynthesized. A large proportion of these has arisen from the discovery in the 1940sof the antileukaemic properties of the chemical warefare agents, the nitrogen mustads. The activity of these compounds is ascribed to their capacity for biological alkylation

It is usually treated with a combination of surgery , chemotherapy and radiotherapy. While chemotherapy forms an important modality for treating cancer, there are several hurdles to its efficient usage such as multi-drug resistance, excessive e toxicity to normal cells, insufficient amount of drug reaching the target cells, angiogenesis (formation of new blood vessels from pre- existing vessels) and metastasis. Thus there is an urgent global need to develop non –toxic medicine have been found to possess anti- cancer activity, thus there is an urgent global need to develop non toxic anticancer agents for various kinds of carcinomas. Many of the siddha medicines have non toxic effects for treating various type of cancer diseases

In my study Ihave selected select "*guru pathangam*" for "*kanna putru"* according to *anubogavaidya navaneetham for treating the buccal* cancer. *Pathangam* is the sublimation process of medicine. It is the superior preparation of siddha medicine nearly it act as karpam type of medicine. Drug have self life time of 10years.

AIM AND OBJECTIVES

2. AIM AND OBJECTIVES:

cancer is the killer disease. And also no medicine for cure the disease 100%. So the world is expecting the correct medicine for the disease. In that way the drug

"guru pathangam" for bucckal cancer .as per "*anupoga vaithya navaneetham*" reference.

Pathangam type of medicines come under alchemy process. So I have selected *"gurupathangam"* for anticancer activity.

In this dissertation wok, gurupathangam compound drug in taken with a view of

1.literary review of the compound drug ingredients

2. gunapadam aspect

3. modern aspect

4. standardization

5. Toxicity study

6. Phamaxcological study

7.Clinical study.

3.2. **GUNAPADAM ASPECT:**

1.வீரம்: HYDROGYRUM PERCHLORIDE/CORROSIVE SUBLIMATE:

“பாடினேன் பிறக்குமுப் பத்தி ரண்டு

பாங்கான தாதுவுடைப் பெயரைக் கேளு

வீடினேன் வீரமொடு வைக்கிராந் தந்தான்”

‘தாதுதான் தந்திரமாய் சித்தர் வைத்த

சாங்கமாம் பேரையினிச் சாற்றக்கேளு

கொங்கியென்சவ் வீரங்கோழித் தலைக் கெந்தி ”

-போகர் 7000 -குணப்பாடம் ப.எ14, 16)

இது இயற்கை பாடாணமெனினும்,தற்போது கடைகளில் விற்கும் செயற்கை பாஷாணமான சவ்வீரமே மருத்துவத்தில் பயன்பட்டு வருகிறது.

வேறு பெயர்கள்:

சரக்கு சுண்ணம், பறங்கி பாஷாணம், கொச்சி வீரம், மீனாட்சிமைந்தன், பூவிந்து, சாரத்தின் சத்துரு, பறிமித்துரு,சேவகன்.

சரக்கு சுண்ணம்: சுண்ணத்திற்கு ஆதி.

பிறப்பு ∴தோற்றம்:

சிவனின் நெற்றி கண்ணிலிருந்து நெருப்பு பொறி சூதம் இருந்த இடத்தில் பட கொழுந்து படர்ந்தாற் போல் வளர்ந்து வீரமாயிற்று. (---குணாடம் தாது வகுப்பு ப.எ.289)

வைப்பு முறை:

சூடத்துடன் சீனம், வெடியுப்பு,சாரம்,கல்லுப்பு,இந்துப்பு,போன்ற பல்வேறு சரக்குகள் இட்டு குப்பியிட்டு எரித்து பதங்கித்து எடுத்துள்ளனர்.

-(மச்சமுனி நாயனார்-800 யோகம்-ஞானம்-வைத்தியம் ப.எண்145).

சத்துரு-மித்துரு:

சத்துரு: அயம், நாகம்,பொன்.

மித்துரு: சூதம்.

பஞ்ச பூத கூறு:

வீரம்: அப்பு பூதம். (----பச்சை வெட்டு பதினாறு---குண பாடம் ப.எ.16.)

வீரம்: தேயு பூதம். --நந்தீசர் கலைஞானம், போகர் காரசார துறை. -குண பாடம் ப.எ.17

நாத-விந்து கூறு:

நாகத்திற்கு வீரம் புளி.

புளியாரைக்கு வீரம் உப்பு.

சுத்தி:

பாகற்பாயைப் பிளந்து நடுவில் சவ்வீரக்கட்டியை வைத்து கயிற்றால் கட்டி லாயந்திரமாய் நீரில் முழுகாமல் இளநீரில் ஒருமணிநேரம் எரித்து எடுக்க சுத்தியாகும்.

சுத்தி முறைகள்	சரக்குகள்
1.துலாயந்திரமாக எரித்தல் (துணியில்)	: இளநீரில் சூடன்.
2.துலாயந்திரமாக எரித்தல் (பாகற்காயில்)	: இளநீர்.்.பழச்சாறு.
3.கிராசம் கொடுத்தல்	: படிகாரம்,சூடன் கலவை.
4.ஊறல்	: பசும்பால்.்.முலைப்பால்
5.சுருக்கு ூ எரித்து எடுத்தல்	: மிளகு குடிநீர், கறியுப்பு,சூடன்
சுவை	: கார்ப்பு.

வீரியம் : வெட்பம்.

செய்கை : உடல்தேற்றி,

கிருமிநாசினி,

அழுகலகற்றி,

புண்ணுண்டாக்கி.

பொது குணம்:

‘குன்மமொடு குட்டம் கொடியவனி லத்திரட்டு

துன்மாங் கிசப்பெருக்குஞ் சூலைநோய் - வன்மையுறு

குாமியப்புண் ணாதியநோய் கணடாற்சவ்

வீரனெனுஞ் சாமிநா மத்தையுச் சரி”

-குணப்பாடம் தாது வகுப்பு

பொருள்: குன்மம், குட்டம்,கெபடிய வாத நோய்கள், கேடடைந்த ஊன்பெருக்கு நோய், சூலை, காமியப்புண்கள்மற்றும் பற்பல புண் நோய்கள் போகும்.

மருந்துகள்	தீரும்நோய்கள்
1.வீரப்பற்பம்	: குணத்தில் கூறப்பட்ட நோய்கள்
2.வீரச்செந்தூரம்	: சுரம், சன்னி,வாதநோய்கள்
3.வீரஜெயநீர்	: குணத்தில் கூறப்பட்ட நோய்கள்
4.மகாவீரமெழுகு	: வாதநோய், மேக நோய்கள்
5. களிம்பு	: மேக சொறி, வண்டுக்கடி.
6.கட்டு	: குணத்தில் கூறப்பட்ட நோய்கள்
7.திரிதோட மாத்திரை	: சுரம், சன்னி.
8.ஜெயவீரரணசிங்கி கயிறு	: விரணங்கள்,படர்தாமரை,பருக்கள்,

இராஜபிளவை,

இலிங்க புற்று.

நஞ்சு குறிகுணம்:

, வாய், தொண்டை, ஆமாசயம், வீங்கி புண்ணாதல்,

- களிம்பு சுவை தோன்றல்,
- வாந்தி,
- பேதி,
- இரத்த பேதி,
- வாய்நீருறல புண்ணாதல்,
- விக்கல்,
- தாகம்,
- மூர்ச்சை உண்டாக்கும்.
- பக்க வலி, அன்றியும் மரணம் உண்டாக்கும்.

நஞ்சு முறிவு:

‘ முறையாகச் சவ்வீர மொய்குழலாய் கொண்டால்

---நீலிவே ராகுமே நெய்சடடிச்-----“ (--- குணப்பாடம் தாது வகுப்பு ப.எ.296)

முறிவு: நீலிவேர்பட்டை சாறு, சிறு நெருஞ்சிற்சாறு, நெய்சட்டிச்சாறு, முட்டை வெண்கரு,இளநீர்,பால் நஞ்சு முறியும் மட்டும் தரவும்.

1.சுண்ணத்திற்கு ஆதி ஆகும்.

2.நவலோகங்களை நீற்றும்.

3.கருநாக சத்தால் வீரம் மெழுகாகும்.

சேரும் மருந்துகள்:

வங்க சுண்ணம்

தாளகப் பற்பம்

கந்தகத்தைலம்

அயவீரச் செந்தூரம்

தாழம்பூ மாத்திரை

வான்மெழுகு

திரிமூர்த்தி பதங்கம்

மேகவிரணக் களிம்பு

சண்டமாருதம்

MODERN ASPECT: -CORROSIVE SUBLIMATE:

Mercury(II) chloride or mercuric chloride is the chemical compound with the formula $HgCl_2$. This white crystalline solid is a laboratory reagent and a molecular compound.

PHYSICAL PROPERTIES:

Molecular formula : $HgCl_2$

Molar mass : 271.52 g/mol

Appearance : white solid

Density : 5.43 g/cm^3

Melting point : 276 °C, 549 K, 529 °F

Boiling point : 304 °C, 577 K, 579 °F

Solubility in water : 7.4 g/100 ml (20 °C)

Solubility : soluble in alcohol, ether, acetone, ethyl acetate
slightly soluble in benzene, CS_2

Acidity (pK_a) : 3.2 (0.2M solution)

Structure

Crystal structure : Orthogonal

Coordination geometry : Linear

Molecular shape : Linear

- Mercuric chloride is not a salt but a linear triatomic molecule, hence its tendency to sublime. In the crystal, each mercury atom is bonded to two close chloride ligands.

USES:

- Mercuric chloride is occasionally used to form an amalgam with metals. Mercury(II) chloride was used as a photographic intensifier.
- Syphilis was frequently treated with mercuric chloride before the advent of antibiotics. It was inhaled, ingested, injected, and applied topically.
- Poisoning was so common that its symptoms were confused with those of syphilis. This usage of 'salts of white mercury' is referred to in the English folk-song, The Unfortunate Rake.

Toxicity:

- Mercuric chloride is highly toxic, not only acutely but as a cumulative poison.

GUNAPADAM ASPECT

பூரம்/இரசகற்பூரம்: (HYDROGYRUM SUBCHLORIDE/CALOMOL)

பூரசுத்தி:

இது கார சார வகைகளுல் ஒன்று. இது உப்பு இரசம் இவைகளின் கூட்டினால் செய்யப்படும் சரக்காகும்.

பெரும்பாலும் வைப்பு சரக்காக செய்யப்பட்டு பயன்படுத்தப்படுகிறது.

நிறம்: நல்ல வெண்மை நிறம்.

பூரத்திற்கு பாதரசத்திற்கு உள்ள குணங்களே மிகுந்து உள்ளது

பொதுகுணம்

”இடைவாத சூலை யெரிசூலை குமந்
தொடைவாழை வாத மாஞ் சோணி--யிடையாதோ
வொக்குரச கர்ப்பூர மொறே யளவொடுநல்
இக்குவெல்லத் தேழுநளீ.” -குணபாடம் தாது சீவம்

நல்ல இரசகர்ப்பூரத்தை அளவுடன் கரும்பு வெல்லத்தில் ஏழுநாள் கொடுக்க இடுப்பை பற்றிய சூலை ஆங்காங்கு எரிச்சலைத் தருகின்ற சூலை வாத குன்மம் தொடை வாழை

வாதரத்த நோய். தீரும்

“இருண்ட மேனி பொன்னிறமாம் இதுவே கற்பம் இயம்பீரே”

பூரம் கற்பம் போல செயல்பட்டு உடலை காக்கும்.

கம்மாறு வெற்றிலை மிளகு ஆகிய இரண்டையும் கால் பலம்(8.75 கி) வீதம் நிறுத்தி எடுத்துச் சிறிது நீர் விட்டு அரைத்து, கல்கத்தை ஒருபடி (1.3 லிட்) நீரில் கலந்து ஒரு பலம் (35 கி) பூரத்தைச் சீலையில் முடிந்து துலாயந்திரமாய் நீரில் அமிழும்படி செய்து சிறு தீயால் எரிக்க வேண்டும்.நீர் முக்காற் பங்கு சுண்டிய பிறகு பூரத்தை எடுத்து நீர் விட்டுக் கழுவி வெய்யிலில் உலர்த்தி எடுக்கச் சுத்தியாகும்.

சுவை:

உப்பு கார்ப்பு

வீரியம்:

வெப்பம்

பிரிவு:

கார்ப்பு

செய்கை:

உடல்தேற்றி

உமிழ்நீர்பெருக்கி

கிருமிநாசினி

பேதிஉண்டாக்கி

பித்தநீர்பெருக்கி

சேரும் மருந்துகள்:

இரசகர்பூர குளிகை:

பூரம் வெள்ளைப்பூண்டு மிளகு வெற்றிலை

சுண்டைகாய் அளவு மாத்திரை ஏழு நாள் இருவேளை

தீரும் நோய்கள்: வளிகிரந்தி இலிங்கப்புற்று யோனிப்புற்று கிரந்தி குழிகிரந்தி

-குணபாடம் தாது சீவம 212.

பஞ்பூத சரக்கு: ஆகாய கார சார சரக்கு

இது ஒரு பீசச்சரக்கு.

பூரத்தின் மித்துரு: இரும்பு காந்தம் கல்லுப்பு சாரம் தங்கம்

உலோக மாரண குருவில் பூரம் சேர்கிறது.

MODERN ASPECT:

Mercury(I) chloride is the chemical compound with the formula Hg_2Cl_2. Also known as calomel (a mineral form, rarely found in nature) or mercurous chloride, this dense white or yellowish-white, odorless solid is the principal example of a mercury(I) compound. It is a component of reference electrodes in electrochemistry.

Properties	
Molecular formula	Hg_2Cl_2
Molar mass	472.09 g/mol
Appearance	White solid
Density	7.150 g/cm^3
Melting point	525 °C (triple point)
Boiling point	383 °C (sublimes)
Solubility in water	0.2 mg/100 Ml
Solubility	insoluble in ethanol, ether
Refractive index (n_D)	1.973

The name calomel is thought to come from the Greek καλός *beautiful*, and μέλας *black*. This name (somewhat surprising for a white compound) is probably due to its characteristic disproportionation reaction with ammonia, which gives a spectacular black coloration due to the finely dispersed metallic mercury formed. It is also referred to as the mineral *horn quicksilver* or *horn mercury*.

Medicinal uses:

Calomel was taken internally and used as a laxative and disinfectant, as well as in the treatment of syphilis, until the early 20th century. Mercury became a

popular remedy for a variety of physical and mental ailments during the age of "heroic medicine."

It was used by doctors in America throughout the 18th century, and during the revolution, to make patients regurgitate and release their body from "impurities". Benjamin Rush, a famed physician in colonial Philadelphia and signatory to the Declaration of Independence, was one particular well-known advocate of mercury in medicine and famously used calomel to treat sufferers of yellow fever during its outbreak in the city in 1793. Calomel was given to patients as a purgative until they began to salivate. However, it was often administered to patients in such great quantities that their hair and teeth fell out. Shortly after yellow fever struck Philadelphia, the disease broke out in Jamaica. A war of words broke out in the newspapers concerning the best treatment for yellow fever; bleeding or calomel. Anecdotal evidence indicates calomel was more effective than bleeding.

இலிங்கம்:

வேறுபெயர்: கடைவன்னி கர்ப்பம், வன்னி

“உருவிலிங்க சங்கதமா யூறுகட்டி யும்போங்

குருவிலிங்க சங்கமத்தைக் கொள”.

-குணபாடம் தாது சீவம் 201

இலிங்கம்

பேதி,சுரம்,சந்நிபாதம்,தீராப்புண்,அதிமூத்திரம்,காணாக்கடி,காசம்,கரப்பான்,சிரங்கு,சொல் வதற்கும் பார்ப்பதற்கும், வெறுப்பு தோன்றும் பரவு நுணாக்காய்க் கிரந்தி,குட்டம், கிரந்தி தீரும்.

செய்கின்ற சூலை,வாத நோய் முதலியவைகளையும்,மற்றும் உடலில் மறைந்து இருக்கும்

பிணிகளையும் நீக்கும் என அறிக.

வெப்ப வீரியம்

உடல் தேற்றி செய்கை உடையது.

சேரும் மருந்துகள

இலிங்ககட்டு – பேதி,மூர்ச்சை போகும்

சாதிசம்பீரக்குழம்பு –அசீரணம் போகும்

சுத்தி: பழச்சாறு, மேனிச்சாறு,பசும்பால் அம்மூன்றையும் சமஅளவு கலந்து சுருக்கு கொடுக்கவும்.

MODERN ASPECT:

Cinnabar:

Cinnabar is generally found in a massive, granular or earthy form and is bright scarlet to brick-red in color It occasionally occurs in crystals with a non-metallic adamantine luster. Cinnabar has a rhombohedral bravais lattice, and belongs to the hexagonal crystal system, trigonal division. Its crystals grow usually in a massive habit, though they are sometimes twinned. The twinning in cinnabar is distinctive and forms a penetration twin that is ridged with six ridges surrounding the point of a pyramid. It could be thought of as two scalahedral crystals grown together with one crystal going the opposite way of the other crystal. The hardness of cinnabar is 2–2.5, and its specific gravity 8.1.

Cinnabar resembles quartz in its symmetry and certain of its optical characteristics. Like quartz, it exhibits birefringence. It has the highest refractive power of any mineral. Its mean index for sodium light is 3.08, whereas the index for diamond is 2.42 and that for gallium (III) arsenide (GaAs) is 3.93.

நவச்சாரம்:(ammonium chloride):

வேறு பெயர்

இஷ்டிகை சல்லிகை சூளிகை படு

.

செய்கை

உடல் தேற்றி

வெப்பமுண்டாக்கி

கோழையகற்றி

வியர்வை பெருக்கி

சிறுநீர்பெருக்கி

விரணமுண்டாக்கி

பித்தமகற்றி

இது நிண நரம்புகள் மாமிச கிரந்திகள் மீது தன் வேகத்தைச் செலுத்தும்

பொதுகுணம்:

குன்மம் குடற்சூலை கொல்லும் மகோதரத்தை

வன்மையுறு கல்லடைப்பை மாற்றுங்காண்-சன்மக்

கவிச் சுமுத் தோடங் கனவாதம்நீக்கும்

நவச்சார மாதேநவில்." -குணபாடம் தாது சீவம்.

நவச்சாரம் வயிறுவலி,குடலில் குத்தல் பெருவயிறு,கல்லடைப்பு,சருமத்தில் புலால் வாசம்,திரிதோடம்,கனவாயு இவைகளை நீக்குமென்ப.

மற்றும் இதை உப்புசம்,கல்லீரல் வீக்கம்,பிலீக நோய்,நீர்க்கோவை,ரத்த காசம்,முகச்சந்நி,சூரியாவர்த்த வாதம்,சூதகக்கட்டு,கக்கிருமல்,முறைக்காய்ச்சல், ,விடாக்காய்ச்சல்,இவைகட்கும் உபயோகிக்கலாம்.

MODERN ASPECT:

Ammonium chloride NH_4Cl is an inorganic compound with the formula NH_4Cl. It is a white crystalline salt that is highly soluble in water. Solutions of ammonium chloride are mildly acidic. Sal ammoniac is a name of natural, mineralogical form of ammonium chloride. The mineral is especially common on burning coal dumps (formed by condensation of coal-derived gases), but also on some volcanoes. It is the product from the reaction of hydrochloric acid and ammonia.

It is a by-product of the Solvay process used to produce sodium carbonate

Ammonium chloride is prepared commercially by combining ammonia (NH_3) with either hydrogen chloride or hydrochloric acid

$$NH_3 + HCl \rightarrow NH_4Cl$$

Ammonium chloride occurs naturally in volcanic regions, forming on volcanic rocks near fume-releasing vents (fumaroles). The crystals deposit directly from the gaseous state, and tend to be short-lived, as they dissolve easily in water.[4]

Giant squid and some other large squid species maintain neutral buoyancy in seawater through an ammonium chloride solution which flows throughout their body and is lighter than seawater. This differs from the method of flotation used by fish, which involves a gas-filled swim bladder. The solution tastes somewhat like salmiakki and makes giant squid unattractive for general human consumption.

[Reactions

It is apparent that ammonium chloride sublimes upon heating. However, this process is actually decomposition into ammonia and hydrogen chloride gas.

$$NH_4Cl \rightarrow NH_3 + HCl$$

Ammonium chloride reacts with strong base, e.g. sodium hydroxide, to release ammonia gas:

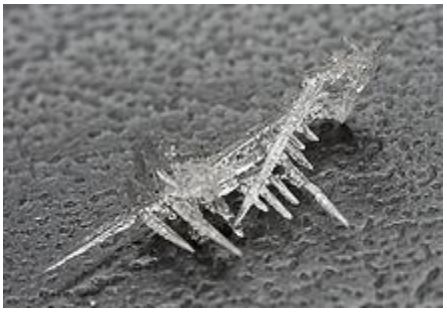
$$NH4Cl + NaOH \rightarrow NH3 + NaCl + H2O$$

Similarly, ammonium chloride also reacts with alkali metal carbonates at elevated temperatures, giving ammonia and alkali metal chloride:

$$2\ NH4Cl + Na2CO3 \rightarrow 2\ NaCl + CO2 + H2O + 2\ NH3$$

A 5% by weight solution of ammonium chloride in water has a pH in the range 4.6 to 6.0.

[Applications



Ammonium chloride crystal(s).

Ammonium chloride is used to produce low temperatures in cooling baths. For example, the zero point of the Fahrenheit temperature scale is determined by placing the thermometer in a mixture of ice, water, and ammonium chloride. Ammonium chloride solutions with ammonia are used as buffer solutions.

Biology and agriculture

In biological applications ammonium chloride serves as a nitrogen source and is used in fertilizers, as a feed supplement for cattle and as an ingredient in nutritive media for yeasts and many microorganisms.

Pyrotechnics

Ammonium chloride is an ingredient in fireworks and safety and contact explosives.

[edit] Textile and leather.Ammonium chloride is used in the textile and leather industry in dyeing, tanning textile printing and to luster cotton

Metalwork

Ammonium chloride is used as a flux in preparing metals to be tin coated, galvanized or soldered. It works as a flux by cleaning the surface of workpieces by reacting with the metal oxides at the surface to form a volatile metal chloride. For this purpose, it is sold in blocks at hardware stores for use in cleaning the tip of a soldering iron and can also be included in solder as flux.

Medicine:

Ammonium chloride is used as an expectorant in cough medicine. Its expectorant action is caused by irritative action on the bronchial mucosa. This causes the production of excess respiratory tract fluid which presumably is easier to cough up. Ammonium salts are an irritant to the gastric mucosa and may induce nausea and vomiting.

Ammonium chloride is used as a systemic acidifying agent in treatment of severe metabolic alkalosis, in oral acid loading test to diagnose distal renal tubular acidosis, to maintain the urine at an acid pH in the treatment of some urinary-tract disorders.

Food:

In several countries, ammonium chloride is known as sal ammoniac and used as food additive. The E number for ammonium chloride used as a food additive is E510.

Ammonium chloride is used to spice up dark sweets called salty liquorice, in baking to give cookies a very crisp texture, and in the flavouring Salmiakki Koskenkorva for vodkas. In India and Pakistan it is used to improve the crispiness of snacks like samosas and jalebi.

Other applications:

Ammonium chloride is used in a ~5% aqueous solution to work on oil wells with clay swelling problems. It is also used as electrolyte in Zinc–carbon batteries. Other uses include in hair shampoo, in the glue that bonds plywood, in cleaning products

like lysol. In hair shampoo, it is used as a thickening agent in ammonium-based surfactant systems, such as ammonium lauryl sulfate.

காடிக்காரம் (NITRATE OF SILVER):

மூர்க்க முறும்பேதி மூர்ச்சை யுடன்வலியும்

பார்க்குங்கண் ணோயோடு பல்விடவும் --நீர்க்கசிந்து

நாறுங் கரப்பானும் நற்காடிக் காரமாதலால

.

வீறுகெட்டுத் தானொழியுமே. குணபாடம் தாது சீவம்.

:

பயன்கள்:

காடிக்காரத்தினால் கடுமையான பேதி பற்கிட்டல் இசிவு கண்ணோய் பலவிதமான

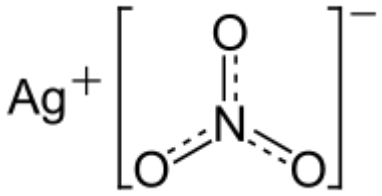
விஷக்கடி கரப்பான் முதலியவை நீங்கும்.

காடிக்காரத்தைத் துர்மாமிசம் உள்ள புண்கள்,நாட்பட்ட புண்கள்பவுத்திரம்,கொறுக்கு

இவைகளின் மீது தேய்த்து வர குணமாகும்.

MODERN ASPECT:

Silver nitrate



Other names[hide]

Nitric acid silver(1+) salt

Properties

Molecular formula	AgNO3
Molar mass	169.87 g mol−1
Appearance	white solid
Density	4.35 g cm−3
Melting point	212 °C, 485 K, 414 °F
Boiling point	444 °C, 717 K, 831 °F (decomp.)
Solubility in water	1.22 kg/L (0 °C) 2.16 kg/L (20 °C) 4.40 kg/L (60 °C) 7.33 kg/L (100 °C)
Solubility	soluble in ethanol and acetone

Silver nitrate is an inorganic compound with chemical formula AgNO3. This compound is a versatile precursor to many other silver compounds, such as

those used in photography. It is far less sensitive to light than the halides. It was once called lunar caustic because silver was called luna by the ancient alchemists, because they believed that silver was associated with the moonIn solid silver nitrate, the silver ions are three-coordinated in a trigonal planar arrangementDiscovery

Albertus Magnus, in the 13th century, documented the ability of nitric acid to separate gold and silver by dissolving the silver.[3] Magnus noted that the resulting solution of silver nitrate could blacken skin. Its common name at the time was nitric acid silver.

Synthesis

Silver nitrate can be prepared by reacting silver, such as a silver bullion or silver foil, with nitric acid:

$$3\ Ag + 4\ HNO3 \rightarrow 3\ AgNO3 + 2\ H2O + NO$$

This is performed under a fume hood because of toxic nitrogen oxide(s) evolved during the reaction.[4]

Reactions

A typical reaction with silver nitrate is to suspend a rod of copper in a solution of silver nitrate and leave it for a few hours. The silver nitrate reacts with copper to form hairlike crystals of silver metal and a blue solution of copper nitrate:

$$2\ AgNO3 + Cu \rightarrow Cu(NO3)2 + 2\ Ag$$

Silver nitrate also decomposes when heated:

$$2\ AgNO3 \rightarrow 2\ Ag + O2 + 2\ NO2$$

Most metal nitrates thermally decompose to the respective oxides, but silver oxide decomposes at a lower temperature than silver nitrate, so the decomposition of silver nitrate yields elemental silver instead.

Uses

Precursor to other silver compounds

Silver nitrate is the least expensive salt of silver; it offers several other advantages as well. It is non-hygroscopic, in contrast to silver fluoroborate and silver perchlorate. It is relatively stable to light. Finally, it dissolves in numerous solvents, including water. The nitrate can be easily replaced by other ligands, rendering $AgNO_3$ versatile. Treatment with solutions of halide ions gives a precipitate of AgX (X = Cl, Br, I). When making photographic film, silver nitrate is treated with halide salts of sodium or potassium to form insoluble silver halide in situ in photographic gelatin, which is then applied to strips of tri-acetate or polyester. Similarly, silver nitrate is used to prepare some silver-based explosives, such as the fulminate, azide, or acetylide, through a precipitation reaction.

Treatment of silver nitrate with base gives dark grey silver oxide:[5]

$$2\ AgNO_3 + 2\ NaOH \rightarrow Ag_2O + 2\ NaNO_3 + H_2O$$

Standard solution molarity = 0.05006 M, depends on solubility and concentration however.

Halide abstraction

The silver cation, Ag^+, reacts quickly with halide sources to produce the insoluble silver halide, which is a cream precipitate if Br^- is used, a white precipitate if Cl^- is used and a yellow precipitate if I^- is used. This reaction is commonly used in inorganic chemistry to abstract halides:

$$Ag^+ + X^- (aq) \rightarrow AgX$$

where $X^- = Cl^-, Br^-$, or I^-.

Other silver salts with non-coordinating anions, namely silver tetrafluoroborate and silver hexafluorophosphate are used for more demanding applications.

Similarly, this reaction is used in analytical chemistry to confirm the presence of chloride, bromide, or iodide ions can be tested by adding silver nitrate solution. Samples are typically acidified with dilute nitric acid to remove interfering ions, e.g. carbonate ions and sulfide ions. This step avoids confusion of silver sulfide or silver carbonate precipitates with that of silver halides. The color of precipitate varies with the halide: white (silver chloride), pale yellow/cream (silver bromide), yellow (silver

iodide). AgBr and especially AgI photo-decompose to the metal, as evidence by a grayish color on exposed samples.

Organic synthesis

Silver nitrate is used in many ways in organic synthesis, e.g. for deprotection and oxidations. Ag+ binds alkenes reversibly, and silver nitrate has been used to separate mixtures of alkenes by selective absorption. The resulting adduct can be decomposed with ammonia to release the free alkene.[6]

Biology

In histology, silver nitrate is used for silver staining, for demonstrating reticular fibers, proteins and nucleic acids. For this reason it is also used to demonstrate proteins in PAGE gels. It is also used as a stain in scanning electron microscopy.[citation needed].

Antimicrobial uses

Water disinfection in hotels and hospitalsPostharvest cleaning of oysters and crabsInhibition of bacterial growth on chicken farmsWater recycling aboard space shuttlesHome purification of water in Europe and North America

Point of use disinfectant for water and vegetables in MexicoAlternative to antibiotics (not recommended by the FDA)

Alternative to laundry detergent

Application to eyes of newborn babies to prevent infection

Coating on catheters to prevent infection

பூநீறு :[Fuller's Earth]:

1.சரக்குவகை:

'---பிறக்கின்ற காரசாரம்

------வருதியே பூநீறு வளையலுப்பு"

‘கரின்ற வாதத்திற் காதி யான

குரமடா சமாதிநிலை வழலைப் பாம்பு”

-போகர் காரசாரத்துறை --குணப்பாடம் தாதுவர்க்கம் ப.எ7

இது ஓர் இயற்கை காரசார.்.உப்பு பொருள் ஆகும். பூநீறு காரச் சரக்கு ஆகும்.

2. வேறு பெயர்கள்:

‘---அப்பனே வழலையுட பேரைக் கேளு

வாரப்பா பிண்டமென்றும் அண்டமென்றும்” ---தன்வந்திரி நிகண்டு ப.எண.17

பொருள்: மூர்க்கன், தரணிநாதன், பூநீறு, பூமிநாதன், தீர்க்கன், ஒட்டச்சி, ஊசரம், வெள்ளை, பூசாரம், குசத்தி, அருக்கன், வேகந்தி, பூமிருது, சவுடு, வண்ணாத்தி, ஆதிமுதல், குருச்சி,
உரகன்,காயகல்பம்,மனோன்மனியின்நாதம்,சத்தியுப்பு,கண்ணி,முப்பு,வழலை,சந்திரனுப்பு, சுரோணிதம் ,சத்தி,மூலம்.,அண்டம்,பிண்டம்.

--(போகர் நிகண்டு அட்டவணை ப.எண் 30), ---அகத்தியர்100,ப.எண்30

3.பிறப்பு .்.தோற்றம்:

‘ –ஊணுகின்ற பங்குனி சித்திரைக்குள்

முறியுவாக்காட்டிலே பொட்டலுக்குள்

--போக முனிவர் ஞான சூத்திரம் ப.எண்10

‘ஆமென்ற சவுக்கார மாதியுப்பு” --இராமதேவர் சூத்திரம் ப.எண்3-4

‘ பாரப்பா புவிதனில்வாழ் நிலப்பயிரைப்

பரலோக மினிசனிகைப் பருவம்பார்த்து” –அகத்தியர் பரிபாஷை 300 ப.எ.192.

‘சிவந்ததொரு பூம்தனிற் பிறந்தபூடு

சிறுபூடு வாட்டமில்லாவளர்ந்தபூடு

கவந்ததொரு செடியங்கே பூத்தபூவுங்

கண்மணியே பூநீரு இதுவுமாகும்” அகத்தியர் பரிபாஷை 300 ப.எ.245.

‘ --பொதிகைக்கு கீழ்சார்வு பூமண்டலங்களினில்

அதிக வளமே யறிகுவார்” -------ஊர்வசி பஞ்சரத்தினம் ப.எ.53

- இது உவர்மண் பூமியிலும்,சிவந்த பூம்யிலும் பங்குனி,சித்திரை,வைகாசித் திங்களில் பொங்கி நீறும்.
- இது சிவகங்கை, காளாஸ்திரி, மோசூர் , உத்திர மேரூர், போன்ற இடங்களில் இருந்து எடுக்கப்படுகின்றது. பூப்போல் மேல் நிற்பதை வாரிக் கொள்ள வேண்டும். இ‡து ஆகாச வெளியில் அமைந்த உப்பாகும்.

4. பூநீறு சவுக்கார வைப்பு:

‘தீய சவுக்காரம் செப்புவேன்

மாயாதி பூநீர் வளர் வெடி சாரமும்”

-(மச்சமுனி நாயனார்-800 யோகம்-ஞானம்-வைத்தியம் ப.எண்145)

பூநீறு சவுக்கார வைப்பு: பூநீறு, சாரம்,வெடியுப்பு, நீரில் கரைத்து காய்ச்சி எடுக்க எண்ணெயாகும்.இதற்கு சவுக்காரம் என்று பெயர்.

5.பஞ்ச பூத கூறு:

இதன் பூத கூறு ஆகாயம் ஆகும்.

6.நாத-விந்து கூறு:

பூநீறு நாத கூறை சார்ந்தது ஆகும். மேலும் பூநீறு காரச் சரக்கு ஆகும்.

7. சுத்தி முறைகள்:

1.‘ பூருவத்தின் சுத்தி பூவெடுக்கும் சித்தி

-----பாருமோர் படிக்குப் பனிச்சலந்தா னாலு-“

பொருள்:1 படி பூநீறு, 4 படி பனி சலம் கலந்து விட்டு பின்பு தெளிவெடுத்து பீங்கான் தட்டுகளில் வெயிலில் வைக்க உப்பாகும்.இவ்வாறு 10 முறை செய்யவும்.இதனை ‘தசதீட்சை” என்றும் கூறுவர்.

2. ’பூர்த்திட்டே ரவிசுருக்கிற் பொங்கி நீறும்

--------ஏர்த்திட்ட எலுமிச்சை சாறு விட்டு----

பொருள்: பூநீற்றுக்கு எலுமிச்சம் பழச்சாறு விட்டு கலந்து பின்பு தெளிவெடுத்து அடுப்பேற்றிக் காய்ச்சி உப்பாக்கிக் கொள்ள வேண்டும்.

8. மருந்து வகைகளில் பூநீறு:

இ‡து நவஉப்பு மெழுகில்,குன்மகுடோரி மெழுகில்,தயிர்சுண்டி சூரணத்தில்,பஞ்சலவண பற்பத்தில், பஞ்சலவணச் சுண்ணத்தில் சேருகின்றது. --(குணபாடம் தாது வகுப்பு ப.எ 419,424).

பூநீற்றை வெந்நீரில் கலந்து,அந்நீரில் வாதம் கண்ட குதி காலை சில நிமிடங்கள் அமிழ்த்தி வைத்தெடுக்க நீங்கும்.மருந்துகளுக்கு வீரியம் ஏற்ற சிறிதளவு சேர்க்கப்படும்.

9. இரசவாதத்தில்
பூநீறு:

வாதத்திற்கு ஆதி மற்றும் கரு ஆகும்.

பூநீறு சாரத்தை கொல்லுவிக்கும்.

முப்பு பொருளில் ஒன்று.---(அகத்தியர் 12000 பெருநூல் காவியம் ப.எ .32)

சவுக்கார சுன்னம்:

‘சுன்னமென்ன வாவதற்குச் சவுக்கார சுன்னம்

சொல்லுவே னுலக வாதிகளே கேளும்

சுன்னமென்ற திறவுகோ லாகும்பாரு

கருனண வைத்து சுன்னமதைக் கருத்தாய்ப்பாரு”

பொருள்: சுன்னங்கள் அனைத்திற்கும் ‘’ திறவுகோல்”· சவுச்சாரச் சுன்னம் ஆகும்.

------(யூகிமுனி அருளிய வாதகாண்ட திரட்டு ப.எ.53).

‘சவுக்காரமே”- வாதத்திற்கும் சுன்னமுறைக்கும் தலையாவும் காலாகவும் நிற்கிறது. இச்சவுக்காரச் சுன்னமே அனைத்திற்கும் உயிராகும்.இதற்கே ‘ சச்சிதானந்த சுன்னம் “ என்று பெயர்.----(கொங்கணவர் 3000 இரண்டாம் காண்டம் ப.எ.337)

மேலும் இது சுண்ணத்திராவகத்தில் சேருகின்றது.—(சித்தர்கள் அருளிய இரசவாதகளஞ்சியம · ப.எ.195)

MODERN ASPECT:

This *Pooneeru* is called as Fuller’s earth or Dhobi’s earth.

- It is alkaline, crystalline,creamy coloured salt ,soluble in water.
- Its pH range is more than 12. It is called Dhobi’s earth as it is used by them for washing purposes.

The chemical composition of *Pooneeru* is discussed below.-Internet sources

- In the ICP-AAS Analysis, it contains Si, Ai, Ti, Fe, Mn, Ca, Mg, K, Na, P, Hg, As, Cr, V, Ni, Cu, Co, Cd , Li, Ba , Sr, Pb elements.
- It is a composite of rich carbonates, sulphates, hydroxides rendering this substance in basic nature.
- The salt collected at the specified time told by *Siddhars* on the night of *Chithra Pournami* contain chemical properties which are not found in the salt collected at other times / days.

During full moon day, elements like mercury, iron found to be contained in more percents.

காடிக்காரம் (NITRATE OF SILVER):

மூர்க்க முறும்பேதி மூர்ச்சை யுடன்வலியும்

பார்க்குங்கண் ணோயோடு பல்விடவும் --நீர்க்கசிந்து

நாறுங் கரப்பானும் நற்காடிக் காரமாதலால

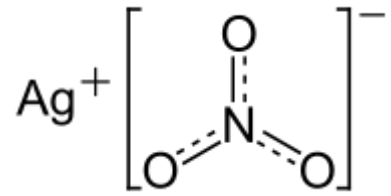
வீறுகெட்டுத் தானொழியுமே.

பயன்கள்:

காடிக்காரத்தினால் கடுமையான பேதி பற்கிட்டல் இசிவு கண்ணோய் பலவிதமான விஷக்கடி கரப்பான் முதலியவை நீங்கும்.

காடிக்காரத்தைத் துர்மாமிசம் உள்ள புண்கள்,நாட்பட்ட புண்கள்பவுத்திரம்,கொறுக்கு இவைகளின் மீது தேய்த்து வர குணமாகும்.

Silver nitrate



Other names :Nitric acid silver(1+) salt

Properties

Molecular formula	AgNO3
Molar mass	169.87 g mol−1
Appearance	white solid
Density	4.35 g cm−3
Melting point	212 °C, 485 K, 414 °F
Boiling point	444 °C, 717 K, 831 °F (decomp.)
Solubility in water	1.22 kg/L (0 °C) 2.16 kg/L (20 °C)

	4.40 kg/L (60 °C) 7.33 kg/L (100 °C)
Solubility	soluble in ethanol and acetone

Silver nitrate is an inorganic compound with chemical formula $AgNO_3$. This compound is a versatile precursor to many other silver compounds, such as those used in photography. It is far less sensitive to light than the halides. It was once called lunar caustic because silver was called luna by the ancient alchemists, because they believed that silver was associated with the moon. In solid silver nitrate, the silver ions are three-coordinated in a trigonal planar arrangement.

Ammonium chloride NH_4Cl is an inorganic compound with the formula NH_4Cl. It is a white crystalline salt that is highly soluble in water. Solutions of ammonium chloride are mildly acidic. Sal ammoniac is a name of natural, mineralogical form of ammonium chloride. The mineral is especially common on burning coal dumps (formed by condensation of coal-derived gases), but also on some volcanoes. It is the product from the reaction of hydrochloric acid and ammonia.

Discovery

Albertus Magnus, in the 13th century, documented the ability of nitric acid to separate gold and silver by dissolving the silver. Magnus noted that the resulting solution of silver nitrate could blacken skin. Its common name at the time was nitric acid silver.

Synthesis

Silver nitrate can be prepared by reacting silver, such as a silver bullion or silver foil, with nitric acid:

$$3\ Ag + 4\ HNO_3 \rightarrow 3\ AgNO_3 + 2\ H_2O + NO$$

This is performed under a fume hood because of toxic nitrogen oxide(s) evolved during the reaction.[4]

Reactions

A typical reaction with silver nitrate is to suspend a rod of copper in a solution of silver nitrate and leave it for a few hours. The silver nitrate reacts with copper to form hairlike crystals of silver metal and a blue solution of copper nitrate:

$2\ AgNO3 + Cu \rightarrow Cu(NO3)2 + 2\ Ag$

Silver nitrate also decomposes when heated:

$2\ AgNO3 \rightarrow 2\ Ag + O2 + 2\ NO2$

Most metal nitrates thermally decompose to the respective oxides, but silver oxide decomposes at a lower temperature than silver nitrate, so the decomposition of silver nitrate yields elemental silver instead.

Uses

Precursor to other silver compounds

Silver nitrate is the least expensive salt of silver; it offers several other advantages as well. It is non-hygroscopic, in contrast to silver fluoroborate and silver perchlorate. It is relatively stable to light. Finally, it dissolves in numerous solvents, including water. The nitrate can be easily replaced by other ligands, rendering AgNO3 versatile. Treatment with solutions of halide ions gives a precipitate of AgX (X = Cl, Br, I). When making photographic film, silver nitrate is treated with halide salts of sodium or potassium to form insoluble silver halide in situ in photographic gelatin, which is then applied to strips of tri-acetate or polyester. Similarly, silver nitrate is used to prepare some silver-based explosives, such as the fulminate, azide, or acetylide, through a precipitation reaction.

Treatment of silver nitrate with base gives dark grey silver oxide:

$2\ AgNO3 + 2\ NaOH \rightarrow Ag2O + 2\ NaNO3 + H2O$

Standard solution molarity = 0.05006 M, depends on solubility and concentration however.

Halide abstraction

The silver cation, Ag+, reacts quickly with halide sources to produce the insoluble silver halide, which is a cream precipitate if Br- is used, a white precipitate if Cl- is used and a yellow precipitate if I- is used. This reaction is commonly used in inorganic chemistry to abstract halides:

$Ag+ + X- (aq) \rightarrow AgX$

where X− = Cl−, Br−, or I−.

Other silver salts with non-coordinating anions, namely silver tetrafluoroborate and silver hexafluorophosphate are used for more demanding applications.

Similarly, this reaction is used in analytical chemistry to confirm the presence of chloride, bromide, or iodide ions can be tested by adding silver nitrate solution. Samples are typically acidified with dilute nitric acid to remove interfering ions, e.g. carbonate ions and sulfide ions. This step avoids confusion of silver sulfide or silver carbonate precipitates with that of silver halides. The color of precipitate varies with the halide: white (silver chloride), pale yellow/cream (silver bromide), yellow (silver iodide). AgBr and especially AgI photo-decompose to the metal, as evidence by a grayish color on exposed samples.

Organic synthesis

Silver nitrate is used in many ways in organic synthesis, e.g. for deprotection and oxidations. Ag+ binds alkenes reversibly, and silver nitrate has been used to separate mixtures of alkenes by selective absorption. The resulting adduct can be decomposed with ammonia to release the free alkeneBiology

In histology, silver nitrate is used for silver staining, for demonstrating reticular fibers, proteins and nucleic acids. For this reason it is also used to demonstrate proteins in PAGE gels. It is also used as a stain in scanning electron microscopy.[citation needed].

Antimicrobial uses

Water disinfection in hotels and hospitalsPostharvest cleaning of oysters and crabsInhibition of bacterial growth on chicken farmsWater recycling aboard space shuttlesHome purification of water in Europe and North America]

Point of use disinfectant for water and vegetables in MexicoAlternative to antibiotics (not recommended by the FDAAlternative to laundry detergentApplication to eyes of newborn babies to prevent infectionCoating on catheters to prevent infection.

பனைவெல்லம் -Palm jaggery:

Vernacular names:

Sanskrit - Guda

Kannada - Bella

Telugu - Bellam

Malayalam - Karuppatti

Hindi - Gud

பயன்கள்:

பனைவெல்லத்தால் முக்குற்றத்தால் வரும் நோய்கள் தீரும். முப்பிணி, சுவையின்மை, குன்மம் இவை நீங்கும்.

‘‘—தங்குபனை

வெல்லத்தால் வாதபித்தம் வீறுகபஞ் சந்நிநோய்

வல்லருசி குன்மமறு மால்’’.

-அகத்தியர் குணவாகடம்

Palm jaggery is made from the extract of Palm Trees in Southern India. These trees are also known as *Toddy palm trees or Palmyra trees* .

The palm jaggery obtained after processing is darker and richer in colour. It is slight salty to taste but much healthier of the two. Due to its cooling effects over human body, it is of high value. It does not have the bone meal content which is used for whitening processed sugar. The price of the palm jaggery is double that of sugar.

The first extract of the palm juice which is boiled at high temperatures, is being added with a little salt. The added salt then acts as a preservative. This also prevents the jaggery from becoming too sweet.

When it gets cooled, it is poured into a long cone made of palm leaves. The preservation of the final product is done by wrapping the cone with rice straws. At home, the consumers finely slice the cone, so that the jaggery is cut into disc shapes leaving a palm ribbon around its edges. Some families simply dry the extracted palm juice on mats. After it dries, the jaggery is being stored in an air-tight container which preserves it for nearly one year. **Palm Jaggery is rich in calcium, iron and other useful vitamins and minerals.**

- One of the tastiest and healthy products. It is used in the preparation of sweet dishes.
- The medicinal properties in it makes it a unique product that can be used by people of all ages.
- It may be used sufficiently by people who suffer from diabetes.
- It is used as a substitute of sugar in the preparation of coffee, tea, etc.
- Panakam or Juice is prepared by adding black pepper and palm jaggery, to a glass of water. Sometimes a pinch of cardomom(elaichi) is also added to get a good flavor and taste.
- In the South Kanara district region, most of the time it is given to women who give birth to a child. If the mixture of powdered palm jaggery and black jeera are given to such women, then impurities in the breast milk would disappear and baby gets the white and clean milk during breast feeding. Even in the case of milking cows, the same thing is repeated after it gives birth to a calf.

Nutritional values:

Palm jaggery (gur) is much more nutritious than crude cane sugar, containing

protein,	1.04%

fat,	0.19%
sucrose,	76.86%
glucose,	1.66%
total minerals,	3.15%
calcium,	0.861 %
phosphorus	0.052%
iron per 100 g	11.01 mg
copper per100 g.	0.767 mg

The fresh sap is reportedly a good source of vitamin B complex.

-Atchley, A. A. 1984. Nutritional value of palms. *Principes* 28(3):138-143.

3.3 SIDDHA ASPECT OF THE DISEASE:

இலத்தீன் மொழியில் நண்டுக்கு "கான்சர் (cancer)"என்று பெயர்.

உலகெங்கிலும் இனறைக்கு அந்தப்பெயர்தான் வழங்கி வருகின்றதென்பது குறிப்பிடத்தக்கது.

புற்றுநோய்க்கு "கான்சர்" என்று பெயர் கொடுத்தவர் ஹிப்போகிரேட்டஸ என்பவர் ஆவார். இந்த நேயின் பொதுப்படையான அடையாளம் வீக்கம் அல்லது கட்டியேயாகும்.

ஒரு கட்டியானது எலும்பைப் போல கட்டியாக இருந்தால் அது புற்றுநோயின் அடையாளம்.

"புற்று நோயை மெளனப்பகைவன்

மறைந்திருந்து கொல்லும் பகைவன" என அழைக்கலாம்.

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விப்புருதி நோய்படலம்

உப்பு,உறைப்பு,காரசாரம்,கிழங்கு வகை,மாமிசம் இவைகளை அதிகமாக புசித்ததாலும,

அதிகபோகத்தினாலும், ஆறின உணவுகளாலும், அடைகலத்தை அம்பலத்தில் விட்டவருக்கும், படுவழக்கு சொன்னவருக்கும், தானிய அளவு குறை செய்தவர்க்கும்,நீரில் நிர்வாணமாயிருந்தவரருக்கும்,சிவனடியார்குப் பழிப்பு கூறினவருக்கும்,வயது மேற்பட்ட சம்போகத்தோர்க்கும்,விப்புருதி நோய் உண்டாகும்

வகைகள் ஏழு :

1.கெர்ப்ப விப்புருதி

2.குவளை விப்புருதி

3.பித்த விப்புருதி

4. சந்து விப்புருதி

5. சேட்ப விப்புருதி

6. வாத விப்புருதி

7. ஓடு விப்புருதி

நோய்குறிகுணம்:

ஆசனத்தில் உபதஜதிரவங்கள்,ஆசன வாயு நாபிக்கு மேல் கீழ் இரத்தம் விழும்.நாபிக்கு கூழ் கட்டிகள் பழுத்து உடையும்.

1.கெர்ப்ப விப்புருதி:

வயிறு பொருமல், பக்கங்கள்,கீழ்வயிறு புண்போலாகும்

புளியிலை போல் உலரும் மேனிஉதிரம் திரண்டு கீழ்வயிற்றில் தங்கும்

கர்ப்பம் போல் உவைல் காணும்தலை வலி உண்டாகும்

புண்போல ஆகும்

2.குவளை விப்புருதி

இடுப்பு முள்ளந்தண்டு குய்யம், விலாக்கள் நெஞ்சு நடுங்கி குளிர் உண்டாகும்.

குத்தல் உண்டாகி இருமலுடன் கோழை உண்டாகும்.

உதிரம வலி உண்டாகும். உதிரம் சீழ் வடியும்.

3.பித்த விப்புருதி

ரத்த வாந்தி: உடல்வெளுப்பாகும், உடம்பெங்கும் எரிச்சலுமாகும: குளிர்,, சித்தப்பிரமை உண்டாகும். கொட்டாவி, ருசியின்மை உண்டாகும்.சுரத்துடன் தாகமுமாகும், குருதி கண்டித்து கட்டியாகும். வயிறு உளைச்சல் இருக்கும்.

4. சந்து விப்புருதி:

வுன்மையாய்ப் புற்றைப் போல் வயிற்றுப்பக்கம் மகத்தான சங்கடமாய திரண்டெழுந்து

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சுநந்துவிப்புருதீயிடச் சார்வுதானே.

யூகி வை சிந்தாமணி

அத்திபழத்தையொத்து எரிச்சலுடன குடலில நிறைநது பருக்கச் செய்யும். கனத்து கெட்டிப்பட்டுக் குளிர்ந்து மினுமினுத்து நமைச்சலையுண்டாக்கும் என்பதாம்.

5. சேட்ப விப்புருதி:

ரத்தமானது குடலில் இருந்து சிறு கொப்புளங்களாக்கி தாதுவினால குடல் விருத்தியுண்டாக்கும்.

6. **வாத விப்புருதி:**

குடல்வீக்கமில்லாமல் மிகுந்த துன்பத்தைக் கொடுத்துப் பருத்தும் கீழிறங்கி தவளைப் போல் இரைவதும், நடக்கும்போது கொஞ்சம் உஷ்ணத்தினால் வாயவு அதிகரிககும்

7. ஓடு விப்புருதி:

சிலவேளை சுரத்தை உண்டாக்குவதும் வேதனையைச் செய்வதுமாயிருக்கும். கறுத்தும், தடித்தும், மயக்கமும்,வாந்தியும், கழிச்சலும் நோவும் உண்டாக்கும்.

சாத்தியம்:

1.கெர்ப்ப விப்புருதி

2.குவளை விப்புருதி

3.பித்த விப்புருதி

.4. ஓடு விப்புருதி

அசாத்தியம்:

1. சந்து விப்புருதி

2. சேட்ப விப்புருதி

3. வாத விப்புருதி

3.4 MODERN ASPECT OF THE DISEASE:

Oral cancer is a subtype of head and neck cancer, is any cancerous tissue growth located in the oral cavity.[1] It may arise as a primary lesion originating in any of the oral tissues, by metastasis from a distant site of origin, or by extension from a neighboring anatomic structure, such as the nasal cavity or the Oral cancers may originate in any of the tissues of the mouth, and may be of varied histologic types: teratoma, adenocarcinoma derived from a major or minor salivary gland, lymphoma from tonsillar or other lymphoid tissue, or melanoma from the pigment-producing cells of the oral mucosa. There are several types of oral cancers, but around 90% are squamous cell carcinomas,[2] originating in the tissues that line the mouth and lips. Oral or mouth cancer most commonly involves the tongue. It may also occur on the floor of the mouth, cheek lining, gingiva (gums), lips, or palate (roof of the mouth). Most oral cancers look very similar under the microscope and are called squamous cell carcinoma. These are malignant and tend to spread rapidly

The application of current treatment techniques (surgery, radiation therapy, chemotherapy and biological therapy)result in the cure of nearlyn two of three patients diagnosed with cancer.Neverthless, patience experience the dianosis of cancer as one of the most traumatic and revolutionary events that has ever happened to them . independent of prognosis, the dianosis brings with it a change in a person's self image and in his or her role in the home and workplace.

The most significant risk factor for cancer overall is age; two-thirds of all cases were in those over age 65.cancer Is the second leading cause of death behind heart diseases.

Lung cancer is the most common cancer and the most common cause of cancer death in the world . Breast cancer is the second most common cancer world wide.

It has been estimated that nine modifiable risk factors are responsible fvor more than one third of cancers world wide .These include smoking ,alcohol consumption , obesity ,physical inactivity ,

Low fruit and vegetable consumption, unsafe sex ,air pollution ,

Indoor smoke from house holds fuels and contaminated injections.

Because cancer therapies are toxic.New symptoms developing

In the course of cancer treatment should always be assumed to be reversible until proven otherwise.The fatalistic attribution the anorexia, weight loss and jaundice to the current or progressive tumor could result in a patient dying from a reversible inter current cholecystitis.

Intestinal obstruction may be due to reversible adhesion rather than progressive tumor systamatic infection, sometimes with unusual pathogens,may be a consequence of the immuno suppresion associated with cancer therapy. Some drugs used to treat cancer or its complication (eg. Nausea) may produce central nervous system symptoms that look in metastatic disease or may mimic paraneoplastic syndromes such as the syndromes of inappropriate antidiuretic hormone. A definitive diagnosis should be pursued and may even require a repeat biopsy.

Studies of breast cancer,melanoma,lung cancer and lymphoma have all failed to support the notion that asymptomatic relapses are more readily cured by salvage thrapy than symptomatic relapses.in vew of the enormous cost of a full battery of diagnostic tests and their manifest lack of impact on survival, new guidelines are emerging for less frequent follow -up visits,during which the history and physical examination are the major investication performed.

Smoking cessation : tobacco smoking is the most modifiable risk factor for cardiovascular disease,pulmonary disease and cancer.

Smokers have a 33 % life time risk of dying prematurely from a tobacco – related cancer, cardiovascular or pulmonary disease. Tobacco use causes more death from cardiovascular disease than from cancer. Lung cancer and cancers of the larynx, oropharynx, esophagus, kidney, bladder, pancreas and stomach are all tobacco – related.

Cancer is a synonym for malignant neoplasm.cancer of epithelial tissues are called carcinomas; cancers of nonepithelial (mesenchymal)tissues are called sarcomas.Certain human malicnancies are associated with viruses. Examples include burkitt's lymphoma (Epstein-Barr virus),hepatocellur carcinoma (hepattis virus), cervical cancer (human papillomavirus) (HPV) and Tcell leukemia (retroviruses).

APOPTOSIS: Tissue homeostasis requires a balance between the death of aged minally differentiated cells and their renewal by proliferation of commited progenitors,Genetic damage to growth – regulating genes of stem cells could lead to vatastrophic results for the host as a whole .

However , genetic events causing activation of oncogenes or loss of tumor suppressors,which would be predicated to lead to unregulated cell proliferation,instead activate signal transduction pathways that block aberrant cell proliferation.

These pathways can lead to programmed cell death or irrevisible growth arrest. Much as apanoply of inta extracellular signals impinge upon the core cell cycle machinery to regulate cell division,so too these signals are transmitted to acore enzymatic machinery that regulates cell death and survival.

Principles of cancer treatment:

The goal of cancer treatment is the first to eradicate the cancer. If this primary gole can not be accomplished,the gole of cancer treatment shifts to palliation, the amelioration of symptoms and preservation of quality of life while striving to extend life. The dictum primum non nocere is not the guiding principle of cancer therapy.when cure of cancer is possible,cancer treatment may be undertaken despite the certainty of severe and perhaps life threatening toxicities.

Every cancer treatment has the potential to cause harm

and treatment may be given that produces toxicity with no benefit. The therapeutic index of many intervention is quite narrow and most treatment are given to the point of toxicity.Conversely,when the clinical goal is of potentially toxi treatments palliation,careful attention to minimizing the toxicity of potentially toxic treatments becomes a significant goal. irrespective of the clinical scenario,the guiding principle

of cancer treatment should be primum succerrere,"first has ten to help," Radical surgical produces,large-field hyperfractionated radiation therapy,high-dose chemotherapy and maximum tolerable doses of cytokines such as interleukin

(IL) 2 are all used in certain settings where 100% of the patients will experience toxicity and side effects from the intervention and only a fraction of the patients will experience benefit.One of the challenges of cancer treatment is to use the various treatment modalities alone and together in a fashion that maximizes the chances for patient benefit.

Cancer treatments are divided into four main types:surgery,radiation therapy (including photodynamic therapy), chemotherapy (including hormonal therapy and molecularly targeted therapy), and biologic therapy (including immunotherapy and gene therapy). The modalities are often used in combination and agents in one category can act by several mechanisms. For example,cancer chemothe rapy agents can induse differentiation and antibodies(a form of immunotherapy are considered local treatments, though their effects can influence the behavior of tumor at remote sites.

Chemotherapy and biologic therapy are ususlly systemic treatments.

Oncology,the study of tumors including treatment approaches is a multidisciplinary effort with surgical –radiotherapy and internal medicine-related areas of expertise treatments for patients with hemotologic malignancies are often shared by hematologists and medical oncologists.

Signs and symptoms

Skin lesion, lump, or ulcer that do not resolve in 14 days located:On the tongue, lip, or other mouth areasUsually smallMost often pale colored, be dark or discolored

Early sign may be a white patch (leukoplakia) or a red patch (erythroplakia) on the soft tissues of the mouthUsually painless initiallyMay develop a burning sensation or pain when the tumor is advancedAdditional symptoms that may be associated with this disease:Tongue problemsSwallowing difficultyMouth soresPain and paraesthesia are late symptoms.

Causes and risk factors

Oncogenes are activated as a result of mutation of the DNA. The exact cause is often unknown. Regardless of the cause, treatment is the same: surgery, radiation with or without chemotherapy. Risk factors that predispose a person to oral cancer have been identified in epidemiological (epidemiology) studies. India being member of International Cancer Genome Consortium is leading efforts to map oral cancer's complete genome.

In many Asian cultures chewing betel, paan and Areca is known to be a strong risk factor for developing oral cancer. In India where such practices are common, oral cancer represents up to 40% of all cancers, compared to just 4% in the UK.

Some oral cancers begin as leukoplakia a white patch (lesion), red patches, (erythroplakia) or non healing sores that have existed for more than 14 days. In the US oral cancer accounts for about 8 percent of all malignant growths. Men are affected twice as often as women, particularly men older than 40/60. In Indian subcontinent Oral submucous fibrosis is very common. This condition is characterized by limited opening of mouth and burning sensation on eating of spicy food. This is a progressive lesion in which the opening of the mouth becomes progressively limited, and later on even normal eating becomes difficult. It occurs almost exclusively in India and Indian communities living abroad.

Tobacco

Smoking and other tobacco use are associated with about 75 percent of oral cancer cases [3], caused by irritation of the mucous membranes of the mouth from smoke and heat of cigarettes, cigars, and pipes. Tobacco contains over 60 known carcinogens, and the combustion of it, and by products from this process, is the primary mode of involvement. Use of chewing tobacco or snuff causes irritation from direct contact with the mucous membranes.Tobacco use in any form by itself, and even more so in combination with heavy alcohol consumption, continues to be an important risk factor for oral cancer. However, due to the current trends in the spread of HPV16, as of early 2011 the virus is now considered the primary causative factor in 63% of newly diagnosed patients.

Alcohol

Use of alcohol and other toxic liquids is another high-risk activity associated with oral cancer. There is known to be a very strong synergistic effect on oral cancer risk when a person is both a heavy smoker and drinker. The risk is greatly increased compared to a heavy smoker, or a heavy drinker alone. Recent studies in Australia, Brazil and Germany point to alcohol-containing mouthwashes as also being etiologic agents in the oral cancer risk family. Constant exposure to these alcohol containing rinses, even in the absence of smoking and drinking, lead to significant increases in the development of oral cancer. However, studies conducted in 1985, 1995, and 2003summarize that alcohol-containing mouth rinses are not associated with oral cancer. In a March 2009 brief, the American Dental Association said "the available evidence does not support a connection between oral cancer and alcohol-containing mouthrinse". A 2008 study suggests that acetaldehyde (a break-down product of alcohol) is implicated in oral cancer. This study specifically focused on abusers of alcohol and made no reference to mouthwash. Any connection between oral cancer and mouthwash is tenuous without further investigation.

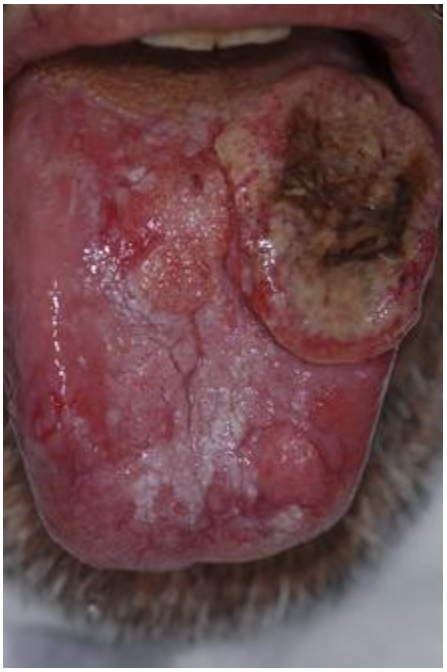
Human papillomavirus

HPV-positive oropharyngeal cancer Infection with human papillomavirus (HPV), particularly type 16 (there are over 120 types), is a known risk factor and independent causative factor for oral cancer. (Gilsion et al. Johns Hopkins) A fast growing segment of those diagnosed does not present with the historic stereotypical demographics. Historically that has been people over 50, blacks over whites 2 to 1, males over females 3 to 1, and 75% of the time people who have used tobacco products or are heavy users of alcohol. This new and rapidly growing sub population between 20 and 50 years old is predominantly non smoking, white, and males slightly outnumber females. Recent research from Johns Hopkins indicates that HPV is the primary risk factor in this new population of oral cancer victims. HPV16 (along with HPV18) is the same virus responsible for the vast majority of all cervical cancers and is the most common sexually transmitted infection in the US. Oral cancer in this group tends to favor the tonsil and tonsillar pillars, base of the tongue, and the oropharynx. Recent data suggest that individuals that come to the disease from this particular etiology have some slight survival advantage.

Hematopoietic stem cell transplantation

Patients after hematopoietic stem cell transplantation (HSCT) are at a higher risk for oral squamous cell carcinoma. Post-HSCT oral cancer may have more aggressive behavior with poorer prognosis, when compared to oral cancer in non-HSCT patients. This effect is supposed to be owing to the continuous life-long immune suppression and chronic oral graft-versus-host disease.

Diagnosis



On biopsy, the three exophytic masses turned out to be oral carcinomas, while the surrounding hyperkeratotic area showed histologic features of oral lichen planus.

An examination of the mouth by the health care provider or dentist shows a visible and/or palpable (can be felt) lesion of the lip, tongue, or other mouth area. As the tumor enlarges, it may become an ulcer and bleed. Speech/talking difficulties, chewing problems, or swallowing difficulties may develop. A feeding tube is often necessary to maintain adequate nutrition. This can sometimes become permanent as eating difficulties can include the inability to swallow even a sip of water.

There are a variety of screening devices that may assist dentists in detecting oral cancer, including the Velscope, Vizilite Plus and the identafi 3000. While a dentist,

physician or other health professional may suspect a particular lesion is malignant, there is no way to tell by looking alone - since benign and malignant lesions may look identical to the eye. A non-invasive brush biopsy (BrushTest) can be performed to rule out the presence of dysplasia (pre-cancer) and cancer on areas of the mouth that exhibit an unexplained color variation or lesion. The only definitive method for determining if cancerous or precancerous cells are present is through biopsy and microscopic evaluation of the cells in the removed sample. A tissue biopsy, whether of the tongue or other oral tissues and microscopic examination of the lesion confirm the diagnosis of oral cancer or precancer.

Management

Surgical excision (removal) of the tumor is usually recommended if the tumor is small enough, and if surgery is likely to result in a functionally satisfactory result. Radiation therapy with or without chemotherapy is often used in conjunction with surgery, or as the definitive radical treatment, especially if the tumour is inoperable. Surgeries for oral cancers include

Maxillectomy (can be done with or without Orbital exenteration)

Mandibulectomy (removal of the mandible or lower jaw or part of it)

Glossectomy (tongue removal, can be total, hemi or partial)

Radical neck dissection

Moh's procedure or CCPDMA

Combinational e.g. glossectomy and laryngectomy done together.

Feeding tube to sustain nutrition.

Owing to the vital nature of the structures in the head and neck area, surgery for larger cancers is technically demanding. Reconstructive surgery may be required to give an acceptable cosmetic and functional result. Bone grafts and surgical flaps such as the radial forearm flap are used to help rebuild the structures removed during excision of the cancer. An oral prothesis may also be required. Most oral cancer patients depend on a feeding tube for their hydration and nutrition. Some will also get a port for the chemo to be delivered. Many oral cancer patients are disfigured and

suffer from many long term after effects. The after effects often include fatigue, speech problems, trouble maintaining weight, thyroid issues, swallowing difficulties, inability to swallow, memory loss, weakness, dizziness, high frequency hearing loss and sinus damage.

Survival rates for oral cancer depend on the precise site, and the stage of the cancer at diagnosis. Overall, survival is around 50% at five years when all stages of initial diagnosis are considered. Survival rates for stage 1 cancers are 90%, hence the emphasis on early detection to increase survival outcome for patients.

Following treatment, rehabilitation may be necessary to improve movement, chewing, swallowing, and speech. Speech and language pathologists may be involved at this stage.

Chemotherapy is useful in oral cancers when used in combination with other treatment modalities such as radiation therapy. It is not used alone as a monotherapy. When cure is unlikely it can also be used to extend life and can be considered palliative but not curative care. Biological agents, such as Cetuximab have recently been shown to be effective in the treatment of squamous cell head and neck cancers, and are likely to have an increasing role in the future management of this condition when used in conjunction with other treatments.

Treatment of oral cancer will usually be by a multidisciplinary team, with treatment professionals from the realms of radiation, surgery, chemotherapy, nutrition, dental professionals, and even psychology all possibly involved with diagnosis, treatment, rehabilitation, and patient care.

[edit] Prognosis

Postoperative disfigurement of the face, head and neck

Complications of radiation therapy, including dry mouth and difficulty swallowing

Other metastasis (spread) of the cancer

Significant weight loss

4. MATERIALS AND METHODS:

PREPARATION OF THE DRUG:

GURUPATHANGAM-

This drug is selected from anuboga vaidhya navaneetham –abdullah sahib part: page:

INGREDENTS:

1. veeram
2. pooram
3. lingam
4. navacharam
5. poneer
6. kaadikaram
7. sotruppu
8. cow'milk

Above no1 to no7 materials are purchased in tampcol, anna hospital campus, arumpakkam.

Cow's milk collected from the milk shop.

Veeram:

Partially cut and open the bitter guard and place the veera katti and tied with thread it also tied with stick a mud chattey with 200ml of tender coconut water.burnt 1 hour as per text . And taken out

Pooram:

Purification method

Kammaru vetrillai (Piper betel) 8.75g

Milaku (Piper nigrum) 8.75 g

place in a kalvam rubbed with water and mixed with 1.3 L water. Pour into the mud pot. Take a poora katti tied with a cloth suspended and immersed with above mixed water, burnt it for drying the mixed water upto ¾ part .

Lingam:

Purification method:

Lemon juice (Citrus acidus) 50 ml

cow's milk 50 ml

Acalypa indica juice 50 ml

all the above are equal quantity mixed. Keep the linga katti on a mud plate and heat it with low fire while droping continuously the juice is liquid which will consolidate or purify the substance.

Navacharam:

Purification method:

Take navacharam and Mix with hot water when it is in hot filtered alow into cool and dried in sunlight salt into solid. Preserve it and bottledup.

Poneer:

Purification method:

Puifying or cleaning the fuller's earth. It is dissolved in pure rain water ,filtered and kept in the hot sun light for evaporation. The resulting salt is again dissolved in rain water, filtered and evaporated as before. Thus it repeated in ten times.

Kaadikaram:

Purification method:

Pour one Liter of tender coconut in to mud pot the kadikaram tied in the cloth and suspended over the contents of a pot while in heating one hour

1. Purified veeram 35 g

2. Purified pooram 35g

3 Purified lingam 35 g

4. Purified navacharam 35g

5. Purified poneer 35g

6 .Purified kaadikaram 4.2g

7. Sotruppu 1050 g

8. cow's milk 250 ml

1. Above first five ingredients are taken, powdered nicely and mixed up in a kalvam, as per rules.
2. This compound is ubbed in a kalvam for complete mixing .
3. Two suitable mud chattis are then taken
4. One in top chattey inner side cow milk spread and dried in the sunlight ,for three times same thing repeated.
5. Bottom chattey filled with 525 g of sotruppu
6. Next the above first five (veeram compound) powder placed in the bottom chattey.
7. Erippu chattey (bottom chattey) covered with second top chattey in such a manner that this chattey approximately fits into the rim of the bottom erippu chattey
8. Seven layers of clay cloth are provided to the junction of the both the top ande bottom chattey.
9. This is then burnt as per rules by Deepagni for 3 hours, Kamalagni for another 3 hours, and Kadagni for another 18 hours.
10. It is allowed to cool down. By this method major part of thippi left in this bottom chattey.

11. All the white colour sublimation found inside the covering of upper chattey which is carefully collected with the use of brush.Weight of pathangam 47.5g
12. Finally puified kadikaram 4.2 g added with this sublimated thing and rubbed into a kalvam for 3 hours.
13. Bottled up in air tight glass container.

    Total pathangam 47.5 + 4.2 = 47g

    Weight of thippi 971 g

Dose: ½ grains to 1 grains (32.5mg to 65mg) twice a day after meals with palm jaggary fo 3 days.

Indication:

all types of vadha diseases.

Head related diseases.

Soothaga vayu.

Meha vayu

chronic ulcers

Kandamalai

Kannakiranthi

Kanna putru (Buccal cancer)

Soolai noikal

Patcha vadham

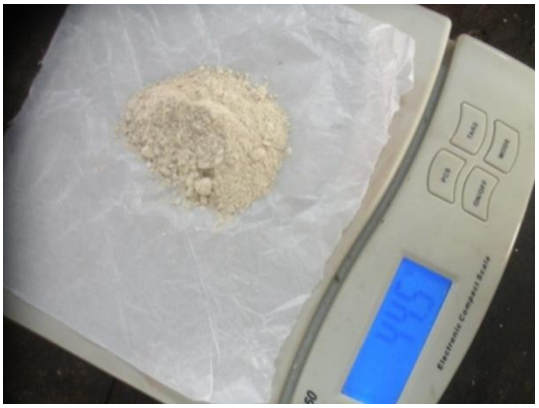
Diet: 1. If the disease is chronic and strength avoid salt and sou tastes.

2. Otherwise no diet restriction adopted.

3 If need substitute lemon juice for tamarind.

4. Avoid karappan and bitter taste substances .

PART-II PHOTOS

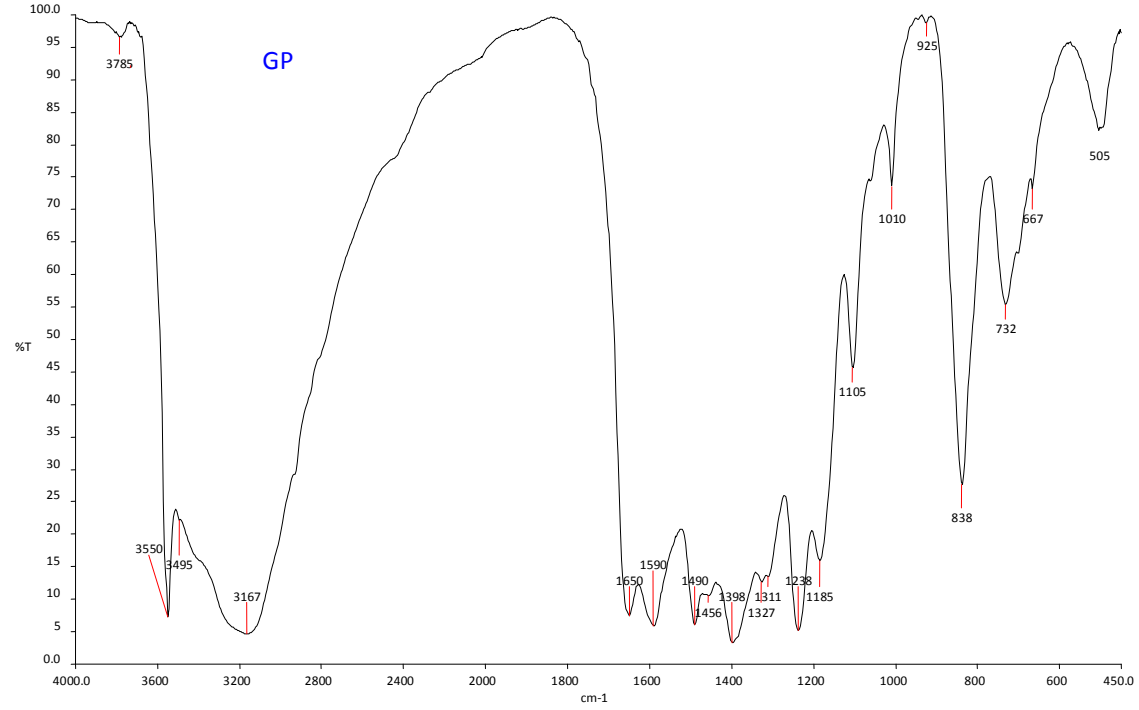


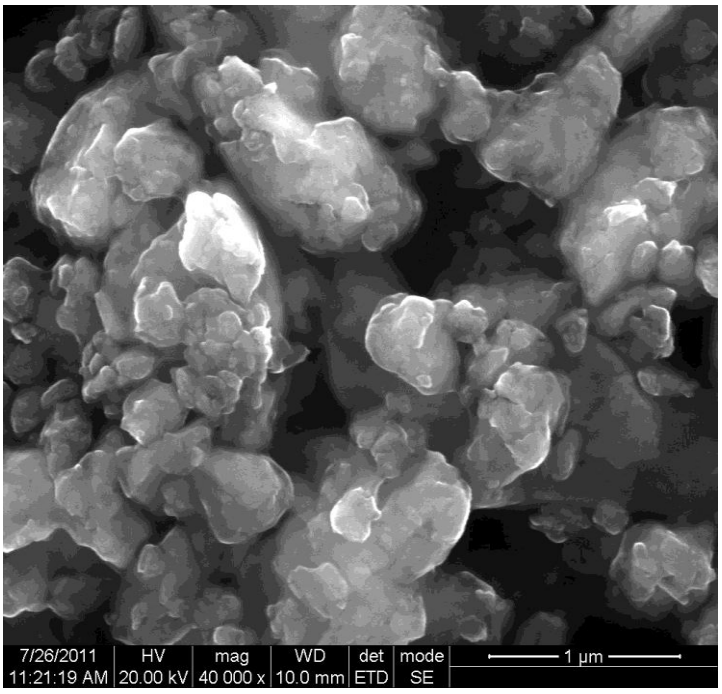
4.2.STANDARDIZATION OF DRUG

Standardization is the first step for the establishment of a consistent biological activity, a consistent chemical profile Standardized herbal products of consistent quality and containing well-defined constituents are required for reliable clinical trials and to provide consistent beneficial therapeutic effects.

Pharmacological properties of an herbal formulation depend on phytochemical constituents present therein. Development of authentic analytical methods which can reliably profile the phytochemical composition, including quantitative analyses of marker or bioactive compounds and other major constituents, without consistent quality of a phytochemical mixture, a consistent pharmacological effect is not expected (M.Mosihuzzaman et.al 2008)

The prepared drug was given for physio chemical analysis, ICP-OES, FTIR and SEM for standardization.





SOPHISTICATED ANALYSIS INSTRUMENT FACILITY

IIT M, CHENNAI-36

PERKIN ELMER OPTIMA 500DV ICP-OES

Sample ID	Analyte	Mean
GP----------		
----	As 193.696	BDL
	Ca 317.933	224.12
	Cd 226.502	BDL
	Fe 238.204	1.75mg/L
	Hg 253.652	3.15mg/L
	K 766.490	20.14
	Na 589.592	54.15mg/L
	P 213.617	7.24mg/L
	Pb 230.204	BDL
	S 181.975	89.123mg/L

Table 1

Colour charaters of Gurupathangam.

S.no	Solvent used	Under ordinary light	Under ultraviolet light
1	PM	Light yellow	Light yellow

PM- powdered material

Table 2

Physicochemical properties of Guru Pathangam

S no.	Parameter	Value obtained (%w/w)	Heavy toxic metals	
1	Total ash value	8.46	Lead	BDL
2	Acid insoluble ash	18.26	Cadmium	BDL
3	Water soluble ash	7.42	Mercury	13.15mg/L
4	Moisture content	6.53	Arsenic	BDL

Table 3

Colour , nature and percent yields of extracts of Gurupathangam

S no	Extract Solvent	Colour	Nature	% Yields (w/w)	pH
1	Water	Lightyellow	Solid	65	7.1-7.3

4.2.3 TOXICOLOGICAL STUDY:

SUB-ACUTE ORAL TOXICITYY ON GURU PATHANGAM IN RATS

MATERIALS AND METHODS

Animals

Male and female albino rats of average body weight of 186g were kept separately in individual polypropylene cages with stainless steel hopper in air-conditioned room (24 °C) of the animal house under uniform animal husbandary conditions. The animals were fed basal diet (Sai meera foods. Bangalore) and water *ad libitum.* The animals were acclimatized to temperature and lighting (12 h light/dark) conditions of the animal house. The animals were housed 3 per cage and body weights were recorded on the day of arrival, day of randomization, prior to Guru Pathangam treatment, on days 7, 14, 21, and 28 post dosing, and on days 7 and 14 of the recovery period.

Sub-acute toxicological studies:

A 28-day study with a 14-day recovery period was conducted. The study design met the criteria outlined in OECD Guideline 407 ("Repeated Dose 28-Day Oral Toxicity Study in Rodents") and was conducted as a limit test. Groups of 4-5-week-old Wistar rats were given by gavage 0 (vehicle control) or 5, 10 and 20mg/kg b.w/day of Guru Pathangam in 2% Carboxy methyl cellulose for 28 days.

The rats were observed twice daily for any adverse clinical signs or mortality during the treatment and recovery periods. Feed consumption (g/day) was recorded weekly throughout the entire study and water intake (g/day) was recorded daily during different weeks of the treatment period and of the recovery period. Prior to termination, fasting blood samples were taken from the retro orbital vein for hematological and clinical chemistry evaluations.

Observations made in this study

Clinical signs

All the rats were observed at least twice daily with the purpose of recording any symptoms of ill-health or behavioural changes. These observations were also performed on week-ends. The observations included but were not limited to changes

in skin and fur, in the eyes and mucous membranes, in the respiratory, circulatory, central nervous and autonomous systems, somatomotor activity and behaviour.

Body weight

The bodyweight of each rat was recorded one week before the start of treatment, daily during the course of the same and on the day of sacrifice. The rats selected for the recovery period were weighed twice a week and on the day of sacrifice. The mean weights for the different groups and sexes were calculated from the individual weights.

Food intake

Prior to the beginning of treatment, and afterwards once a week, the food intake of each cage was recorded and the mean weekly intake per rat was calculated.

Water intake

Water intake was checked by visual observation during the Study. In addition, the water consumption in each cage was measured daily for a period of 5 days, during the 3rd week of treatment and, subsequently, during the 2nd week of the recovery period.

Ophthalmoscopy

Before treatment started, the eyes of all animals were examined. These examinations included the cornea, the conjunctiva, the sclera, the iris and fundus. The observations were made with the aid of an indirect ophthalmoscope. Before the end of the treatment and before the end of the recovery period, additional examinations of the eyes of the animals from the Control and high dose groups were made.

Laboratory Studies

During the 4th week of treatment, samples of blood were withdrawn from the retro orbital sinus of rats from each group, under light ether anesthesia after fasting for 16 hours. The blood samples were taken from each animal approximately between 7:30 and 10:00 hours in order to reduce biological variation caused by circadian rhythms. In addition, samples of the urine produced during 16 hours by rats were taken. To this end the rats were deprived of food for this period of time.

Haematology

The following determinations were performed:

Haemoglobin g/100 mL, Haematocrit %, Mean corpuscular volume (MCV) fL, Mean corpuscular haemoglobin (MCH) pg, Mean corpuscular haemoglobin concentration (MCHC) g/100 mL, Reticulocyte count %, Total leukocyte count $10^3/\mu L$, Differential leukocyte count$10^3/\mu L$ includes Neutrophils, Lymphocytes, Eosinophils, Basophils, Monocytes, and Platelet count $10^3/\mu L$.

Biochemistry

The following blood chemistry determinations were carried out:

Glucose mg/100 mL, Urea mg/100 mL, Creatinine mg/100 mL, Total bilirubin mg/100 mL, Aspartate aminotransferase (AST/GOT) U/L, Alanine aminotransferase (ALT/GPT) U/L, Alkaline phosphatase U/L, Total cholesterol mg/100 mL, Sodium mmol/L, Potassium mmol/L, Chloride mmol/L, Calcium mg/100 mL, Total protein g/100 mL Albumin g/100 mL.

Analysis of urine

The following determinations were made:

Colour, Volume, Macroscopic observation, Specific gravity, pH, Proteins, Glucose, Bilirubin, Ketones, Urobilinogen, Haemoglobin

The results are presented using the following scale*:*

0 = negative, + = small quantity of the parameter analyzed, ++ = moderate quantity of the parameter analyzed, +++ = large quantity of the parameter analyzed. The urinary sediment was examined for the detection of Pus cells, RBCs, Epithelial cells, Crystals, Casts and Others.

Terminal Studies

On completion of the 4 weeks of treatment, two rats from each group were sacrificed by ether inhalation. The remaining rats were sacrificed at the end of the recovery period. A full autopsy was performed on all animals, which included examination of the external surface of the body, all orifices, cranial, thoracic and abdominal cavities and their contents. As the number of animals exceeded the number that could be sacrificed in one day, the autopsies were carried out at the end

of the treatment period. However, each rat continued to receive the test substance until the day prior to its sacrifice.

After the blood collection, internal organs such as heart, lung, liver, kidney, spleen, stomach and brain, eye, sex organs, uterus and epididymis were removed from all rats for detection of gross lesions. After routine processing, the paraffin sections of each tissue were cut at 5μm thickness and stained with haematoxylin and eosin for a microscopic examination.

Organ weights

After the macroscopic examination the following organs were weighed after separating the superficial fat like Brain, Heart, Spleen, Kidneys, Testes and epididymides, Liver, Lungs, Ovaries, Uterus, Pancreas, Spleen, Stomach, Testes and epididymides and Uterus (corpus and cervix). Organ weights were recorded.

Statistical analysis:

The results are presented as means ± SD. Statistical significance was determined by one-way analysis of variance (ANOVA) and Dunnet‘t’ test for significant difference. *P* values less than 0.05 were considered significant.

4.2.4. PHARMACOLOGICAL STUDY:

ANTI TUMOUR ACTIVITY OF GURU PATHANGAM AGAINST DALTON’S ASCITIC LYMPHOMA IN MICE

Cancer can affect any part of the body, cancer usually forms as tumor, some cancers like leukemia, do not form tumors instead these cancer cells involve in the blood and blood forming organs. Often cancer cells travel to other parts of the body where they begin to grow and replace the normal tissue. This process is called metastasis. Over the past few years, cancer has remained a major cause of death and the number of individuals living with cancer is continuing to expand. Hence a major portion of the current pharmacological research is devoted to anti cancer drug design customized to fit molecular targets.

Treatment induced tumors

Since most of the antineoplastic agents are mutagens, neoplasms may arise ten or more years after the original cancer was cured. Treatment induced neoplasms are especially a problem after therapy with chemotherapeutic agents. Therefore, the present study focused on evaluation of the anti cancer activity of the **Guru pathangam** against Dalton's ascitic lymphoma in mice.

OBJECTIVES OF THE STUDY

Hence, in order to identify and define the optimal drug treatment strategies the present investigation was undertaken

- To evaluate the acute and sub acute toxicity profile of the test drug Guru *Pathangam* using OECD guidelines in rodents to fix the therapeutic dose for further pharmacological study.
- To identify and study the more appropriate drug by evaluating the pharmacological (Anticancer) parameters on administration of Guru *Pathangam* in suitable animal models.
- Statistical treatment of data
- To compare the potential range of the object drug with standard existing drug to identify better and safe anticancer drug.

MATERIALS AND METHODS:

Drugs and chemicals

The Guru pathangam prepared traditionally by me at government siddha medical college, Depatment of PG Gunapadam, Chennai and palm jaggary purchased from Arumbakkam, Chennai. And 5-Flurouracil generously gifted by Orchid chemicals, Chennai and all the other drugs and chemicals used in this study were analytical grade and purchased from sigma chemicals, St. Louis, MO, USA and Qualigens fine chemicals.

Stock solution preparation:

The powdered form of Guru Pathangam was filtered through cheesecloth and was mixed uniformly in the adjuvant palm jaggary and diluted with saline to achieve 100mg/ml as main stock solution and used in this study.

Acute Toxicity Study

Animals:

Mice of either sex weighing 25-30g and male Wistar rats weighing 150-200g were obtained from the animal house of Vels University. Animals were fed on conventional diets and water *ad libitum* and they were maintained under standard conditions of humidity, temperature (20-24°C) and light (12-h light: 12-h dark cycle). The rats were randomly assigned to control and different treatment groups, six animals per group. The study was conducted in accordance with CPCSEA (Committee for the Purpose of control and supervision of Experiment on Animals) guidelines and the study was approved by the Institutional Animal Ethical Committee (Registration no.-XIII/VELS/COL/10/CPCSEA/IAEC/23.09.11) the animals were acclimatized for one week under laboratory conditions. All animal experiments were carried out in accordance with institutional Ethical Committee acts.

Experimental

Acute oral toxicity test[6] for the Gurupathangam was carried out as per OECD Guidelines 425. Animals are observed individually after dosing at least once during the first 30 minutes, periodically during the first 24 hours, with special attention given during the first 4 hours, and daily thereafter, for a total of 14 days, except where they need to be removed from the study and humanely killed for animal welfare reasons or are found dead. Then the mice were divided into different groups: (6 mice in each group) Allocation was done in randomized fashion. Average food intake for three days was measured in all animals, before starting the experiment. The monitoring of the parameters commenced immediately after administrating the drug.

Parameters Observed

Mortality of animals, Motor activity, Tremors, Convulsions, Posture, Spasticity, Opisthotonicity, Ataxia, Righting reflex, Sensations, Pilo-erection, Ptosis, Lacrymation, Exopthalmos, Salivation, Diarrhoea, Writhing, Skin color and Respiratory rate. Daily food intake & weight of the animals were also recorded. Three days (72 hours) after the oral administration of the drug, blood was drawn

from each of the animal by retro-orbital vein puncture using fine glass capillary tube to determine: Hemoglobin, R.B.C. count, W.B.C. count etc., was carried out in the Pathology Laboratory.

4.2.4. PHARMACOLOGICAL STUDY:

Evaluation of Anti-cancer activity

The Swiss albino mice (20-25g) were used throughout the study. They were housed in Polypropylene cages under controlled lab condition and fed with standard pellet diet (Hindustan foods (p) Ltd. Bangalore) and water *ad libitum*. Dalton's ascitic lymphoma (DAL) cells were obtained from Amla cancer research institute. Thrissur, Kerala and maintained by weekly intraperitoneal inoculation of 10^6 cells/Mouse. An acute toxicity study was carried out using mice and upto 5000mg/kg dose level. Toxic signs were observed at all the higher dose levels (ie. Upto 50mg/kg p.o.. So, 1/10th of this dose (5mg/kg) was considered as therapeutic dose for this study.

Animals (n=6) were inoculated with 2 x 106 cells/ mouse in phosphate buffered saline on day 0 and treatment with Guru pathangam was started 24 hours after inoculation, at a dose of 5mg/kg/day. Five groups of normal mice (n=6) were used to determine the effect of Guru Pathangam on normal peritoneal cells. All the four groups (2-5) were injected with DAL cells (0.2ml of 2×106 cells /mouse) intraperitoneal except Group 1.This was taken as day zero.

Plan of treatment

Group I- Normal control.

Group II- Cancer control, DAL cell line (2×106cell mouse).

Group III - DAL cell line (2×106cells) treated with 5mg /kg p.o. of Guru Pathangam for 3days only.

Group IV - DAL cell line (2×106cells) treated with 5mg /kg p.o. of Guru Pathangam

Group V - DAL cell line (2×106cells) treated with standard [5-Flurouracil (20 mg/kg i.p)]

Experimental Procedure

After 14 days of treatment, animals from each group were sacrificed by retro orbital plexus method to evaluate the antitumour potential of Guru Pathangam (Kavimani and Manisenthil Kumar, 2000). Group I served as Normal control in which no cancer was induced and allowed to take normal food and water and was treated with 0.9% Sodium chloride only. Group II animals were served as Cancer control induced with DAL cell line (2 × 106cell mice) and no active drug was administered and left untreated till death. The third group animals induced with DAL cell line (2 × 106cell mice) and received Guru Pathangam treatment for three consecutive days to correlate with clinical study. The fourth group animals induced with DAL cell line (2 × 106cell mice) and received Guru Pathangam treatment for fourteen consecutive days. Fifth group was considered as standard treated with 5-FU (20mg/kg/day i.p). (Dabur Pharmaceutical Ltd, India). Peritoneal cells were counted 24 hours and last day after drug administration for each of the treated group and compared with those of the untreated group. All treatments were continued for 14 days and median survival time for each group was noted. The animals surviving more than 20 days were considered as cured. The anti tumour efficiency of Guru Pathangam (5mg/kg/day p.o. for 14 days) was compared with that of 5-FU. MST was noted with reference control. Survival time of drug treated groups was compared with those of control group. Mean survival time and increased life span (%ILS) was calculated using the following equation (Mazumder et.al., 1997; Gupta et.al., 2000):

MST= (Day of first death+ day of last death)/2

$$\text{ILS} = \frac{\text{MST of treated group}}{\text{MST of the control group}} \times 100 - 100$$

Haematological Study:

In order to determine the haematological status of DAL bearing mice on day 14 after transplantation, the comparison were made amongst normal, tumour bearing mice and tumour bearing mice treated with 5mg/Kg p.o. of Guru pathangam. Blood was drawn from each mouse through retro orbital vein using heparinized capillary tube and the WBC Count, RBC Count, Hb level, Protein and PCV were determined. The ascetic fluids were collected on 14^{th} day and smeared. The smear was stained with Giemsa stain for cytological studies.

Hemoglobin concentration of whole blood

The concentration of hemoglobin was measured by the usual procedure using Shali's haemometer. Blood sample was drawn into the pipette up to the 20cumm mark and transferred to the rectangular cell containing a little amount of N/10 Hcl placed in haemometer. After 5 minutes, a color comparison was made with standard color prism of haemometer. If the color of the solution was high, distilled water was added to this solution and mixed using a stirrer until a good color match was obtained. The final reading of the solution in the tube was noted. From the cuvette reading, hemoglobin in g/100ml of blood or its percentage was calculated.

Erythrocyte Count

Blood was taken up to 0.5 marks in the RBC pipette and excess blood was wiped off from the tip. The pipette was then filled to 101 marks with RBC diluting fluid. The RBC pipette was horizontally shaken and a drop of resultant mixture was discharged under the cover glass of a Neubauer counting chamber (Neubauer, Feinoptic, Germany). Number of erythrocytes in 80 small squares was counted under the light microscope. The number of cells in 1 ml of undiluted blood was calculated using the standard formula:

$$\text{Erythrocyte count per ml} = \frac{N}{80} \times 1 \times 2000 \times .02$$

Where N= number of cells in 80 small squares (dilution)

Determination of peritoneal tumor cell count

The ascitic fluid was taken in a RBC pipette and diluted 1000 times. Then a drop of the diluted cell suspension was placed on the Neubauer counting chamber and the number of cells in 64 small squares was counted.

Total Leukocyte Count

Blood was drawn up to 0.5 mark in the WBC pipette, diluted with WBC diluting fluid up to 11 mark and mixed properly. The resultant mixture was charged under the cover slip in the Neubauer chamber and the number of cells in four-corner block (each block is sub divided into 16 squares) was counted. The total leucocytes count per ml of blood was calculated by multiplying the average number of cells in the four blocks by 200.

Packed Cell Volume (PCV)

Using a Pasteur pipette, the wintrobe tube was filled with blood, starting at its bottom and withdrawing the pipette as the tube is filled from below upwards. The blood column was brought to the 'O'. Mark air bubbles, if any were removed from the top of the column of blood so that it stands exactly at 'O'. The tube was centrifuged for about 20 minutes at 25.60 rpm. The reading of the packed cells was taken, the tubes again centrifuged for 5 minutes and the reading was noted. Final reading was recorded when three consecutive readings were identical i.e., when the red cells have been fully packed

Statistical analysis

All the values were expressed as mean ± SEM. The data were statistically analyzed by one-way ANOVA followed by Dunnett's test. The data of haematological parameters were analyzed using ANOVA followed by Tukey multiple comparison test. P values < 0.05 were considered significant.

CLINICAL ASSESSMENT:

4.3. CLINICAL TRIAL

OBJECTIVES

To evaluate the anticancer effect of "guru pathangam"

To explore the efficacy of gurupathangam in patients with cancer patients.

DESIGN OF THE STUDY

Open Clinical trial PHASE – I I

STUDY CENTRE

Arignar Anna Government Hospital of Indian Medicine and Homeopathy, Arumbakkam, Chennai – 106.

STUDY PARTICIPANTS

Both men and women and members of all races and ethnic groups are eligible for this trial. Treatment will be administered on an *inpatient/outpatient* basis. The patients will be selected from the In-patient and Out-patient department of Arignar Anna Government Hospital of Indian Medicine and Homeopathy, Chennai – 106.

NUMBER OF SUBJECTS

Number of participants will be 15.

At the beginning of the study, 10 patients will be treated with a low dose of the drug. If this dose does not cause bad side effects, it will slowly be made higher as new patients take part in the study. A total of 15 patients are the most that would be able to enter the study.

REGISTRATION PROCESS

To register a patient, the following documents should be completed by the investigator.

- Copy of required laboratory tests

- Signed patient consent form
- *Other appropriate forms (e.g., Eligibility Screening Worksheet, Registration Form).*

The investigator will then verify eligibility and will assign a patient study number, drug dose and register the patient on the study.

CRITERIA FOR INCLUSION

Patients with cancer and metastasis and postradiation therapy are eligible for entry to the trial if the following criteria are satisfied.

Co operative patients

The previous drug regimen if any have been with held for 24 hours before the clinical trial.

CRITERIA FOR EXCLUSION

AIDS

Pregnant and lactating women

Renal diseases

Cardio vascular disorder

age below 10 years

WITHDRAWAL CRITERIA

Patients will be removed from study when any of the criteria listed below applies. The reason for study removal and the date the patient will be removed must be documented in the Case Report Form.

In the absence of treatment delays due to adverse events, treatment may continue for 2 cycles or until one of the following criteria applies:

- Disease progression,

- Deterioration of vital signs with cardiac, respiratory, hepatic, renal and CNS changes.
- Intercurrent illness that prevents further administration of treatment,
- Unacceptable adverse event(s),
- Patient decides to withdraw from the study, or
- General or specific changes in the patient's condition render the patient unacceptable for further treatment in the judgment of the investigator.

ROUTINE EXAMINATION AND ASSESSMENT

The full details of history and physical examination of the patients is to be recorded as per the proforma (form I and I A). The clinical assessment will be done initially at the end of 4 days, 7 days, 14 days and 21 days during treatment and at the end of the 21 days follow up (form II) to be done. The laboratory investigation and the physiological parameters will be recorded initially at the end of the treatment and at the end of follow up as per the proforma (form III).

TRIAL DRUG

GURU PATHANGAM

DOSAGE

½ to 1 grain (35 to 70 mg) twice daily for 3 days. After meals. With palm jaggary

Dose will be fixed after finding the LD50.

DURATION OF TRIAL

Study Period: 3 days .

Total duration: 3 days.

TREATMENT PLAN

DOSAGE

The trial drug *gurupathangam* will be given in the dose of 35 t0 70 mg with palm jaggary depending upon weight (1mg/kg) and the severity of the case.

DIET RESTRICTION AND MEDICAL ADVISE

- Patient will be take fresh vegetables and fruits..
- They will be advised to take high protein diet cereals and easily digestive foods.
- Avoid spicy food.
- Over eating avoided
- The clinical improvement will be observed and recorded daily in the proforma of case sheet.

TRIAL CONDUCT

This study will be conducted in compliance with the protocol approved by the Institutional Review Board, and according to Good Clinical Practice standards. No deviation from the protocol will be implemented without the prior review and approval of the IRB except where it may be necessary to eliminate an immediate hazard to a research subject. In such case, the deviation will be reported to the IRB as soon as possible.

CLASSIFICATION OF RESULTS

5. **Good Response**
   a. Relief of Symptoms above 75%
   b. Laboratory parameter findings towards normalcy.
6. **Fair Response**
   a. 50% to 75% relief in symptoms.
   b. Significant improvement in laboratory parameter.
7. **Poor Response**
   25% to 49% relief in symptoms and minimal improvement in laboratory parameters.
8. **No Response**
   No relief in symptoms and no significant improvement in laboratory parameters.

FOLLOW UP

Assessment will take for every three days before treatment and after treatment. During this period clinical assessment (form II) and laboratory investigation (form III) will be carried out.

STATISTICAL ANALYSIS

The data will be tabulated and analyzed by students 'T' test.

5. RESULTS AND DISCUSSION:

Physiochemical analysis:

Heavy toxic metals Lead BDL

Cadmium BDL

Arsenic BDL

Mercury 3.15 mg/L

As pe the above result lead ,cadmium,arsenic are in BDL .

Mercury 3.15 mg present

During the medicine preparation 24 hours continuos heating process applied the medicine and collected after sublimation process. And the drug dosage period is 3 days only .

PH of the drug 7.1 -7.3 so the drug comes under slightly alkaline nature.alkaline nature of the drug is basically useful lfor drug act good.

ICP- OES: Ca 224.12 mg

S 89.123mg

Fe 1.75

Na 54.15

K 20.14

Hg 3.15

Sodium bicarbonate administered directly on the neoplastic masses is said to destroy the fungal colonies lying at the "heart" of the tumor. Additionally, according to Dr. Tullio Simoncini, this baking soda treatment could even be self-applied in certain types of cancer, i.e. if the cancer is limited to the organ (not infiltrating the confined [probably meaning "surrounding/adjacent" tissue, for example in the oral cavity, oesophagus, stomach, intestine, rectum. The supervision of a doctor, however, is indicated. In all other cases the assistance of a doctor is mandatory

Sulphur is the principal chemical constituent in onions and helps to detoxify the body and prevent the growth of cancer cells. According to the National Cancer Institute "Allyl sulphur compounds, which occur naturally in garlic and onions (especially red onions), make cells vulnerable to the stress created by products of cell division. Because cancer cells divide very quickly, they generate more stressors than most normal cells. Thus, cancer cells are damaged by the presence of allyl sulphur compounds to a much greater extent than normal cells

.**SEM:**

The particle size comes under the nano group. So the drug may come under nano technical base drug. The dosage of the drug is 1mg/kg weight and the period is 3 days. so the drug have potant because of nano group.

FTIR: In the result stetches are comes they notofy the amine and alkane bonds and OH bond.

TOXICOLOGICAL STUDY;

In the acute toxicity, severe adverse changes were noted in all the animals treated with 50mg/kg above dose levels. But animals treated with the dose of 50mg/kg body weight showed mild behavioral changes 10min after oral administration and no mortality was observed. Death was noted at all the other high doses. According to the literature, the drugs with tolerability range of dose less than 50mg/kg of body weight are considered to toxic. Thus the Guru Pathangam can be classified in the category of substance with toxicity (Class-II). The results of sub

acute toxicity study revealed that the treatment of Guru Pathangam on rats possess significant changes in general behavioural pattern and produced major signs of toxicity at the dose level of 10 and 20mg/kg exposure during once a day treatment.

Hence the treatment pattern was altered as every 48h for 28 days Even though it was resulted in death of the animals after 13 days at 20mg/kg treatment. Signs of observable toxicity were detected during the experimental period. Alternate day treatment of Guru Pathangam in single oral dose showed significant body weight changes (Table-1). Similarly, significant difference in ($P<0.01$) (decrease) food intake was observed in all the groups after one week of drug treatment (Table-2). There was a gradual increase in water consumption was observed in all the groups throughout the study period (Table-3). As shown in Table 9 the calculated relative weights of the control and treated animals groups varied from one organ to another. For the heart, Brain and kidney from the control group the relative weights were not significant to those of the treated groups. A considerable difference in the values of other organs was observed compared to the control group ($P<0.01$). No significant differences ($P<0.05$) were noted in the relative weights of the other organs. However, there is no major correlation between the relative weights of the organ and the doses of the Guru Pathangam.

The hematological status (Table 4) after 28 days of oral administration of Guru Pathangam has significant variation ($P<0.01$) for Platelets, M.C.V., Neutrophil, Lymphocytes and Total WBC were observed. There is no variation was significantly different for other parameters. In the haematological parameters, there was a marked decrease in TLC was observed and also decrease in haematocrit value ($P<0.01$) was noted in the animals given 20mg/kg dose of Guru Pathangam (Table-4). Similarly, from the biochemical analysis, the ALP, SGOT, SGPT levels were increased significantly ($P<0.01$) in the entire dose treated groups but there were no major modifications in the other biochemical parameters.

A fall of blood glucose level was observed in the groups treated with 20mg/kg dose of Guru Pathangam (Table-5). After 28 days dosage of Guru Pathangam, there were no significant changes in Total protein, Albumin, Globulin, A/G Ratio, HDL, LDL, VLDL Ratio, Total Bilirubin and in Uric Acid. Change in all the other biochemical parameters were found to be statistically significant especially

creatinine. This result indicates that the Guru Pathangam when taken for long periods of time may cause severe damage to the vital organs.

Table-6 shows that the urea, sodium concentrations are drastically increased ($P<0.01$) in the entire dose treated groups with respect to control. The results of urine analysis indicate that the urine volume is gradually decreased in the dose dependent manner after Guru Pathangam treatment. In the same manner there was a slight alterations was observed in PH. The colour intensity of the urine is not altered on the basis of drug dose range.

In the urine collected from the 20mg/kg Guru Pathangam treated group few RBC, Pus and epithelial cells were seen (Table-8). The histopatological study of the liver of different groups of rats showed an abnormal architecture. Rats treated orally with Guru Pathangam for 28 days showed major abnomalities such as focal lymphocytic infiltration and/or necrosis in liver, lymphocytic infiltration in the kidneys, focal lymphocytic infiltration in the heart, gliosis in the brain, interstitial pneumonitis in the lungs, eosinophillic infiltration in uterus were observed and gender and physiology related and are covered in the background data of the pathology.

The kidney of normal animals showed normal histopathological features. Animals treated with Guru Pathangam at 5mg/kg dose levels showed normal glomeruli, slight necrosis of tubular epithelium and tubules filled with proteinous exudates along with mild interstitial inflammation. These over all signs not found in the control groups and animals received 5 and 10mg/kg body weight. This study presents strong evidence of the toxic effect of the Guru Pathangam was confirmed beyond 5mg/kg dose level. These results showed that the use of the Guru Pathangam is not safe and suitable for the extensive utilisation in therapy.

In the acute toxicity, severe adverse changes were noted in all the animals treated with 50mg/kg above dose levels. But animals treated with the dose of 50mg/kg body weight showed mild behavioral changes 10min after oral administration and no mortality was observed. Death was noted at all the other high doses. According to the literature, the drugs with tolerability range of dose less than 50mg/kg of body weight are considered to toxic. Thus the Guru Pathangam can be classified in the category of substance with toxicity (Class-II). The results of sub acute toxicity study revealed

that the treatment of Guru Pathangam on rats possess significant changes in general behavioural pattern and produced major signs of toxicity at the dose level of 10 and 20mg/kg exposure during once a day treatment.

Hence the treatment pattern was altered as every 48h for 28 days Even though it was resulted in death of the animals after 13 days at 20mg/kg treatment. Signs of observable toxicity were detected during the experimental period. Alternate day treatment of Guru Pathangam in single oral dose showed significant body weight changes (Table-1). Similarly, significant difference in ($P<0.01$) (decrease) food intake was observed in all the groups after one week of drug treatment (Table-2). There was a gradual increase in water consumption was observed in all the groups throughout the study period (Table-3). As shown in Table 9 the calculated relative weights of the control and treated animals groups varied from one organ to another. For the heart, Brain and kidney from the control group the relative weights were not significant to those of the treated groups. A considerable difference in the values of other organs was observed compared to the control group ($P<0.01$). No significant differences ($P<0.05$) were noted in the relative weights of the other organs. However, there is no major correlation between the relative weights of the organ and the doses of the Guru Pathangam.

The hematological status (Table 4) after 28 days of oral administration of Guru Pathangam has significant variation ($P<0.01$) for Platelets, M.C.V., Neutrophil, Lymphocytes and Total WBC were observed. There is no variation was significantly different for other parameters. In the haematological parameters, there was a marked decrease in TLC was observed and also decrease in haematocrit value ($P<0.01$) was noted in the animals given 20mg/kg dose of Guru Pathangam (Table-4). Similarly, from the biochemical analysis, the ALP, SGOT, SGPT levels were increased significantly ($P<0.01$) in the entire dose treated groups but there were no major modifications in the other biochemical parameters.

A fall of blood glucose level was observed in the groups treated with 20mg/kg dose of Guru Pathangam (Table-5). After 28 days dosage of Guru Pathangam, there were no significant changes in Total protein, Albumin, Globulin, A/G Ratio, HDL, LDL, VLDL Ratio, Total Bilirubin and in Uric Acid. Change in all the other biochemical parameters were found to be statistically significant especially

creatinine. This result indicates that the Guru Pathangam when taken for long periods of time may cause severe damage to the vital organs.

Table-6 shows that the urea, sodium concentrations are drastically increased ($P<0.01$) in the entire dose treated groups with respect to control. The results of urine analysis indicate that the urine volume is gradually decreased in the dose dependent manner after Guru Pathangam treatment. In the same manner there was a slight alterations was observed in PH. The colour intensity of the urine is not altered on the basis of drug dose range.

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Table 1. Body wt (g) of albino rats exposed to Guru Pathangam for 4 weeks.

Dose (mg/kg/day)	***Days***				
	1	**7**	**14**	**21**	**28**
Control	109.30±10.12	115.10±10.15	120.54±6.88*	124.15±10.15**	129.10±10.00**
5	116.52±8.10	108.16±8.71	104±7.2	100±10.33*	92±4.89**
10	124.60±10.21	112.5±10.84	116±10.48	109.11±9.10*	103±8.40**
20	115.12±9.18	110.5±8.32	105.10±6.22*	103.2±6.51**	100±5.28**

**P<0.01; *P<0.05. N=6 *Values are mean ± S.D. (One way anova followed by Dunnett's test).*

Table 2. Food (g/day) intake of albino rats exposed to Guru Pathangam for 4 weeks.

Dose (mg/kg/day)	**Days (gms/rats)**				
	1	**7**	**14**	**21**	**28**
Control	40.87±3.59	44.10±2.99	45.54±3.04	48.50±3.81*	48.46±2.87*
5	38.15±2.57	40.14±5.98	34±2.11**	30±2.80**	30.18±2.32**
10	35.33±2.06	37.8±4.08*	32±2.15**	29.32±2.10	28.15±2.00**

20	36.19±2.62	40±2.82	32.56±2.27**	24.32±2.00	20.8±1.79**

**P<0.01; *P<0.05. N=6 *Values are mean ± S.D. (One way anova followed by Dunnett's test).*

Table 3. Water(ml/day)intake of male and female albino rats exposed to Guru Pathangam for 4 weeks.

Dose (mg/kg/day)	**Days (ml/rat)**				
	1	**7**	**14**	**21**	**28**
Control	64.15±5.12	60.78±4.10	60±5.00	62.10±4.28	60.47±3.10
5	70.10±3.50	75±1.68	70.5±2.72	79.8±3.34*	75.40±3.15
10	62.24±2.09	66.15±2.30	79.66±3.64**	60.10±3.37	64.42±2.47
20	68.62±3.51	56.32±2.24*	63.5±2.89	70.45±3.28	65.11±2.72

**P<0.01; *P<0.05. N=6 *Values are mean ± S.D. (One way anova followed by Dunnett's test).*

Table 4. Hematological parameters after 4 weeks treatment with the Guru Pathangam

Parameter	**Control**	**5mg/kg**	**10 mg/kg**	**20 mg/kg**
Red blood cell (mm^3)	7.84±0.54	7.98±0.33	7.98±0.26	8.06±0.31
HB (%)	50.26±1.09	48.10±0.35	41.40±0.30**	40.18±0.32**
Leukocyte ($x10^6$/mL)	11401±321	10157±288*	10626±270**	10102±220**
Platelets/ul	1154±182.15	1318±124.13	1730±180.22**	1767±259.12**

MCV (gl)	61.7±0.36	48.10±3.89**	50.52±4.82*	44.18±4.00**
N	6±1.54	5.10±0.81	6.22±1.42	5.56±1.24
L	90.33±6.60	74.15±4.52**	60.30±4.14**	50.84±4.32**
M	2.5±0.54	0.5±0.54	1.66±0.81	1.5±0.54
E	1.160.75	1.16±0.98	1±0.63	1.66±1.03
B	0±0.00	0.5±0.41	0±0.00	0±0.00
ESR(mm)	1.33±0.51	2.45±0.33*	4.15±0.29**	4.23±0.38**
PCV	48.42±3.47	43.47±2.48*	44.33±2.31	45.32±3.57
MCH pg	19.45±0.19	19.44±0.74	18.84±0.71	18.98±0.93

**P<0.01; *P<0.05. N=6 *Values are mean ± S.D. (One way anova followed by Dunnett's test).*

Table 5. Effect of treatment with Guru Pathangam biochemical parameters.- LFT

Dose (mg/kg)	**Control**	**5mg/kg**	**10 mg/kg**	**20 mg/kg**
Total Bilirubin (mg/dL)	0.22±0.04	0.24±0.05	0.24±0.05	0.21±0.07
Bilirubin Direct (mg/dL)	0.1±0.02	0.1±0.02	0.1±0.04	0.08±0.04
Bilirubin Indirect (mg/dL)	0.11±0.04	0.15±0.05	0.11±0.04	0.08±0.07
ALP (U/L)	226.4±8.50	298.13±9.62**	286.22±8.11**	278.32±10.02
SGOT (U/L)	170.24±22.1	136.2±10.73**	112.10±10.22**	104.06±7.40**
SGPT (U/L)	57.82±8.60	22.34±6.88**	13.46±1.27**	10.44±2.18**
Total Protein (g/dl)	8.35±0.49	8.01±0.38	7.8±0.60	7.38±0.64

Albumin (g/dl)	3.1±0.32	3.35±0.51	3.85±0.25	3.53±0.33
Globulin (g/dl)	5.25±0.70	4.8±0.84	5.25±0.37	5.85±0.31
Blood glucose(mg/dl)	105.16±3.48	108.9±10.12	104.47±6.27	78.12±4.45**

**P<0.01; *P<0.05. N=6 *Values are mean ± S.D. (One way anova followed by Dunnett's test).*

Table-6 RFT

Dose (mg/kg)	**Control**	**5mg/kg**	**10 mg/kg**	**20 mg/kg**
Urea (mg/dL)	62.16±3.49	122.50±8.15**	128.10±9.72**	140.21±10.02**
Creatinine (mg/dL)	0.65±0.18	2.50±0.20**	2.98±0.18**	3.10±0.22**
Uric acid (mg/dL)	1.41±0.15	1.32±0.17	1.48±0.22	1.30±0.18
Na m.mol	124.62±10.31	148.22±7.63**	155.2±9.71**	188.61±17.10**
K m.mol	4.6±0.22	7.53±0.85	6.81±0.78	6.03±0.59
Cl m.mol	110.10±7.02	106±5.32	107.5±7.12	110.80±9.08

**P<0.01; *P<0.05. N=6 *Values are mean ± S.D. (One way anova followed by Dunnett's test).*

Table-7 Lipid Profile

Dose (mg/kg)	**Control**	**5mg/kg**	**10 mg/kg**	**20 mg/kg**
Cholesterol (mg/dl)	76.11±4.18	76.20±5.0	77.16±4.18	78.01±6.3
HDL (mg/dL)	15.00±2.56	14.42±2.34	14.48±2.30	14.10±2.00
LDL (mg/dL)	35.04±2.15	34.00±2.45	35.10±2.16	34.12±2.60
VLDL (mg/dl)	19.18±2.34	20.07±2.32	21.13±2.37	20.28±2.14
Triglyceride (mg/dl)	89.02 ±	98.14 ±	80.95 ±24.02	100.04 ±

	20.46	22.00		30.11

**P<0.01; *P<0.05. N=6 *Values are mean ± S.D. (One way anova followed by Dunnett's test).*

Table-8 Urine Analysis

Parameters	**Control**	**5mg/kg**	**10 mg/kg**	**20 mg/kg**
Volume	2.8ml/24hr	1.8ml/24hr	1.2ml/24hr	1.4ml/24hr
Colour	Straw Yellow	Orange Yellow	*Orange*	Reddish Orange
Transparency	Clear	Clear	Clear	Clear
Specific gravity	1.010	1.010	1.010	1.010
PH	7.2	>7.8	>9.1	>9.0
Protein	Nil	Nil	Nil	Nil
Glucose	Nil	Nil	Nil	Nil
Bilirubin	-ve	-ve	-ve	-ve
Ketones	-ve	-ve	+ve	+ve
Blood	Absent	Absent	Absent	Present
Urobilinogen	Normal	Normal	Normal	Normal
Pus cells	Nil	3-4cells/HPF	5-6cells/HPF	5-6cells/HPF
RBCs	Nil	Nil	Present	Present
Epithelial cells	1-2cells/HPF	1-2cells/HPF	2-3cells/HPF	2-3cells/HPF
Crystals	Nil	Nil	Nil	Nil
Casts	Nil	Nil	Nil	Nil
Others	Bacteria seen	Bacteria seen	Bacteria seen	Bacteria seen

Table 9. Effect of oral administration of a Guru Pathangam on organ weight

Dose (mg/kg)	**Control**	**5mg/kg**	**10 mg/kg**	**20 mg/kg**
Liver (g)	5.34±0.07	4.55±0.18**	4.36±0.22**	4.1±0.25**
Heart (g)	0.62±0.04	0.55±0.02	0.48±0.08*	0.46±0.03**
Lung (g)	1.60±0.07	1.10±0.14**	1.67±0.20	1.39±0.09
Spleen (g)	0.67±0.04	0.47±0.02**	0.35±0.03**	0.34±0.04**
Ovary (g)	2.04±0.05	2.04±0.10	2.09±0.11	2.55±0.42**
Testes (g)	1.34±0.12	1.09±0.09*	1.30±0.07	1.24±0.07
Brain (g)	1.51±0.08	1.47±0.11	1.52±0.04	1.65±0.11
Kidney (g)	0.64±0.05	0.80±0.08	0.79±0.07	0.73±0.07
Stomach (g)	1.39±0.10	1.07±0.05**	1.02±0.05**	1.08±0.07**

**P<0.01; *P<0.05. N=6 *Values are mean ± S.D. (One way anova followed by Dunnett's test).*

RESULTS & DISCUSSION

5. RESULTS AND DISCUSSION:

1. In the physio chemical analysis lead , cadmium, arsenic are BDL

Mercury 3.15 mg/L present in the drug.

Method of preparation may produce the mercury. In the heatig of mud pot having lingam (calomel) and veeram (mercurus sub chloride) and sotruppu (sodium chloride) so may be the sublimation medicine containing puified form of mercury (Valai rasam).

2. ICP – OES:

As per the results of ICP-OES ca 224.12

A meta-analysis by the international Cochrane Collaboration of two randomized controlled trials found that calcium "might contribute to a moderate degree to the prevention of adenomatous colonic polyps".

More recent studies were conflicting, and one that was positive for effect (Lappe, et al.) did control for a possible anti-carcinogenic effect of vitamin D, which was found to be an independent positive influence from calcium-alone on cancer risk A randomized controlled trial found that 1000 mg of elemental calcium and 400 IU of vitamin D_3 had no effect on colorectal cancer A randomized controlled trial found that 1400–1500 mg supplemental calcium and 1100 IU vitamin D_3 reduced aggregated cancers with a relative risk of 0.402.

An observational cohort study found that high calcium and vitamin D intake was associated with "lower risk of developing premenopausal breast cancer."

Sodium bicarbonate administered directly on the neoplastic masses is said to destroy the fungal colonies lying at the “heart” of the tumor. Additionally, according to Dr. Tullio Simoncini, this baking soda treatment could even be self-applied in certain types of cancer, i.e. if the cancer is limited to the organ (not infiltrating the confined [probably meaning “surrounding/adjacent”] tissue, for example in the oral cavity, oesophagus, stomach, intestine, rectum. The supervision of a doctor,

however, is indicated. In all other cases the assistance of a doctor is mandatory (to adIt is important to note that sulphur, the key ingredient of red onions, is the active component of many leading alternative cancer therapy compounds, including DMSO and MSM.minister the infusions etc.).

Sulphur is the principal chemical constituent in onions and helps to detoxify the body and prevent the growth of cancer cells. According to the National Cancer Institute "Allyl sulphur compounds, which occur naturally in garlic and onions (especially red onions), make cells vulnerable to the stress created by products of cell division. Because cancer cells divide very quickly, they generate more stressors than most normal cells. Thus, cancer cells are damaged by the presence of allyl sulphur compounds to a much greater extent than normal cells.

SEM:

Particles are seen in the 40.000x magnification seen µm there are some numbers of particles occur. So the prepared drug in he nano particle size.therapeutically dosage 32.5 to 65 mg (1/2 to 1 grains) for 3 days only.

Preclinical study: in the preclinical results the drug in the category of class I I.

In the subacute study shows the liver toxicity.

This study presents strong evidence of the toxic effect of the Guru Pathangam was confirmed beyond 5mg/kg dose level. These results showed that the use of the Guru Pathangam is not safe and suitable for the extensive utilisation in therapy.

Various experts have defined acute toxicity variously. The organization for economic cooperation and development (OECD) panel of experts has defined acute toxicity as "the adverse effect occurring within a short time of (oral) administration of a single dose of a substance or multiple doses given within a span of 24 hours. The purpose of acute toxicity studies is to determine the safe dose range at which the drug can be used such that there is not harmful or lethal effect on the animal. Acute toxicity study of Guru pathangam indicates the severe toxic symptoms from the lower dose of 50 mg/kg. Hence one tenth of the safe dose was considered for the anticancer treatment.

Anticancer study

Hippocrates, the great Greek physician (460-370 B.C), who is considered the father of medicine, is though to be the first person to clearly recognize difference between benign and malignant tumors. His writings include description of cancers involving various body sites. Hippocrates noticed that blood vessels around a malignant tumor looked like the claws of crab. He named the disease karkinos (the Greek name for crab) to describe tumors that may or may not progress to ulceration. In English this term translates to carcinos or carcinoma.

The early 20^{th} century saw great progress in our understanding of microscopic structure and functioning of the living cells. Researchers pursued different theories to the origin of cancer, subjecting their hypothesis to systematic research and experimentation. A virus causing cancer in chickens was identified in 1911. Existence of many chemical and physical carcinogens was conclusively identified during later part of the 20^{th} century. Later part of the 20^{th} century showed tremendous improvement in our understanding of the cellular mechanisms related to cell growth and division. Many factors that suppress and activate the cell growth and division were identified.

The general signs and symptoms of cancer include unexplained weight loss, fever, fatigue, pain and changes in skin in addition to general symptoms, following common symptoms could be an indication of cancer, including change in bowel habits or bladder function, sores that do not heal, unusual bleeding and discharge, thickening or lump in breast or other parts of the body, indigestion or trouble in swallowing, recent changes in wart or mole, nagging cough. Cancer is the leading cause of death world wide according to reported date, out of total 58 million deaths worldwide in 2005, cancer accounts for 7.6 million or 13% of all deaths more than 70% of all death in 2005 occurred in low and middle in some countries death forms cancer in the world are projected to continue rising with an estimated 9 million people dying from cancer in 2015 and 11.4 million dying in 2030.

Generally, any potential anticancer drug is expected to increase the mean survival time and thus increasing life expectancy. There is a tendency for increase in body weight in tumour bearing mice, which is the result of increased formation and collection of ascitic fluid. Potential anticancer drugs reduce the body weight by

decreasing the formation of ascites and this effect is due to the cytotoxicity against malignant cells, which induce ascites. The tendency for cancer cells is to decrease the peritoneal cell count whereas it is increased in normal animals or those treated with anticancer drugs. In malignancy there is always an alteration of various haematological parameters; increase in a few and decrease in others.

Mean Survival Time (MST)

Mice transplanted with DAL in this study have MST of 17.42 days, which was increased to 28.64 by three days treatment and 31.33 days by 14days administration of Guru pathangam treatment respectively at the dose level of 5mg/kg.p.o., in mice. Tumour bearing mice showed an increase in body weight to the extent of 35g. The reliable method for judging the value of the anti cancer drug is the extension of lifespan of the animal and disappearance of leukemic cells from blood. The result revealed the anti tumour effect of Guru Pathangam against DAL in swiss albino mice.

Estimation of viable tumor cell count

The cells were then stained with Trypan blue (0.4% in normal saline) dye. The cells that did not take up the dye were viable and those that took the stain were nonviable. These viable and nonviable cells were counted.

Cell count = (No. of cells x Dilution) / (Area x Thickness of liquid film)

Peritoneal Cell Count

Guru Pathangam increases peritoneal cell count in normal mice for three days. Increase in peritoneal cell count induced by Guru Pathangam is an indirect indication of their anticancer property. The peritoneal cell count was calculated in individual as $8.2 \times 1.4 \times 10^6$ and enhanced the count as $10.6 \pm 1.9 \times 10^6$ in combinational treatment respectively. The peritoneal ascitic fluid smear result is substantial to the related parameters.

Haematological Parameters

Haematological parameters of tumour bearing mice on day 14 were found to be remarkably altered from the normal group. There is a decrease in Hb, RBC and lymphocytes in malignancy accompanied by an increase in WBC especially

neutrophils, protein and PCV. These changes are due to iron deficiency or due to haemolytic of myelopathic conditions induced by malignancy. Guru Pathangam have very well reverted the above haematological parameters altered by the transplantable tumour of DAL. In the differential leukocyte count the neutrophil level was increased while the lymphocyte count decreased. At the same period of time, the Guru Pathangam treatment could restore all the altered parameters to normal level. Guru pathangam treatment in normal mice showed remarkable increase in potential cell count and haematological study showed drastic changes in all the tumour-induced animals, which were normalised after 14 days treatment of Guru pathangam. The common problems encountered in cancer chemotherapy are myelosuppression and anaemia. Anaemia occurring in tumour bearing mice is mainly due to reduction in RBC or hemoglobin production, and this may occur either due to iron deficiency or due to haemolytic or other myelopathic conditions. Viable cell count of the tumor bearing mice was significantly decreased while non- viable cell count was increased in Guru Pathangam treated groups when compared with DAL treated group. Treatment with Guru Pathangam brought back the hemoglobin content, RBC and WBC counts to near normal. This indicates that Guru Pathangam have a protective effect on the haemopoietic system. Further, analysis of haemotological parameters showed minimum toxic effect in mice treated with Guru Pathangam. In DAL bearing mice, haematological parameters were reversed to normal by Guru Pathangam administration.

Similarly, Cytological studies of ascetic fluid on the 14^{th} day in DAL bearing mice revealed that the tumour cells are large in size showed binucleation. In Guru Pathangam 5mg/kg treated animals, showed plasmacytoid feature with varying degree of degeneration and cytoplasmic vacuolation and also showed active mitosis. All these cytological studies indicate the cytotoxic effect of Guru Pathangam. In DAL bearing mice, there was a regular and rapid increase in ascetic fluid volume. Asictic fluid is the direct nutritional source for tumour growth; it meets the nutritional requirement of tumour cells. Guru Pathangam treatment decreased the volume of solid tumour as well as ascites volume, viable cancer cell count and increased the life span. It may conclude that Guru Pathangam decreases the nutritional fluid volume and thereby arrest the tumour growth and increase the life span.

Clinical study gives the clear cut picture about the speed recovery from the swelling and pain and improving difficulty in opening of the mouth.

Op patients 10 and ip patients 5 members are are taken for clinicl study the result of the clinical study is excellent.

CONCLUSION:

In the present study the Guru Pathangam was studied for its antitumour effect against transplantable tumour. A significant improvement of MST and peritoneal cell count were observed in the tumour-induced animals. From these results, it can be concluded that the Guru Pathangam at 5mg/kg dose level posses anti tumour effect against DAL cells probably by activation of macrophages or by some cytokine product release inside the peritoneal cavity. In conclusion, Hematological parameters of tumor bearing mice on day 14 showed significant changes when compared with normal control. The total WBC count and PCV were found to increase with a reduction in the hemoglobin content of RBC. At the same time interval, Guru Pathangam (5mg/kg per day p.o.) treatment changed this altered parameters to near normal. The antitumor effect of the Guru Pathangam is evident from the increase in lifespan, reduction in solid tumour volume and also the reversal of altered haematological parameter almost equal to normal. All these data confirms that the Guru Pathangam can be used as a potential agent in the area of cancer chemotherapy. Further investigations have to be carried out in characterization and the mechanism involving in antitumor and cytotoxic effect. Hence, it can be concluded that the Guru Pathangam has the tumoricidal effect comparable with standard drug 5-FU efficacy and thereby maintain normal physiological profile in mice.

The overall studiy indicates **"*GURUPATHANGAM*"**to be an effective and safe treatment in buccal cancer for reducing in three days miracully.significant reduction of associatwe symptom like, swelling, pain, difficulty in opening of mouth are relieved.The overall compliance of the drug was good. No clinically significanct adverse reactions were reported in correct dosage in three days treatment. Further studies are required to establish.

SUMMARY

7. SUMMARY:

In the buccal cancer, treatment aspect of modern side is surgery, radiation, chemotherapy. Above said treatments are given more side effects and the buccal area is so important for other activities also. So we preserve it only way by correct medications. So the need of internal drug for buccal mucosa is urgent need for the world. In the present study with the drug ***"GURUPATHANGAM"*** **the** following inferences could be attained.

Gurupathangam is the type of alchemic process medicine.

Siddha literature evidences that this drug effectively teats buccal cancer.

The chemical analysis showed the presence of essential elements like calcium, sulphur (cancer preventer)

SEM analysis shows the particle size of the drug and gives the hope to the chronic and killer disease.

The acute toxicity and subacute toxicity study revealed that the drug belonged to classI I and hence we are used in long period.

So, based on the results it can be concluded that the Guru Pathangam falls under the category of drug with high toxicity and it can be suggested that the use of Guru Pathangam more than 5mg/kg clinically for long-term therapy orally may cause severe toxic symptoms like liver damage, respiratory ailments and kidney damage. Therefore the dose reduction is essential to avoid untoward effects on long-term therapy. The anticancer study of the drug in experimental animal Dalton lymphoma celline models proved it to be an effective anticancer drug.

The clinical study showed its efficacy in treating buccal cancer in humans too.

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23. Mega nivaarana bothini pg no;77 Hakkim .p. mohammed abdullah saibu
24. Mooligai marmam.

25. Nakkeerar thirumurugatruppadai
26. Noi nadal noi muthal nadal paagam1noiyilla neri page no25
27. Patharththa guna sinthamani
28. Paththuppattu
29. Pirana rakshamirtha sindhu-12 th part page 30
30. Roga nirnaya saram ennum roaga nithanam
31. Sarebenthirar pitha roga sigichai page No: 1168,156
32. Sarebenthirar vauthya muraigal pg no: 23
33. Sattai muni nigandu -1200 pg no:143
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CONSENT BY THE PATIENT

I have been informed to my satisfaction by the attending physician the purpose of the clinical trial and the nature of the drug treatment and follow up including the lab investigations to be performed to monitor and safeguard my 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 reasons for doing so.

I , exercising my free power of choice , hereby give my consent to be included as a subject in the clinical trial of **Vellerukkan samoola parpam** for the treatment of Bronchial asthma.

DATE: **SIGNATURE**

NAME

CONSENT BY THE PATIENT

I have been informed to my satisfaction by the attending physician the purpose of the clinical trial and the nature of the drug treatment and follow up including the lab investigations to be performed to monitor and safeguard my 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 reasons for doing so.

I , exercising my free power of choice , hereby give my consent to be included as a subject in the clinical trial of **Guru pathangam** for the treatment of Buccal cancer.

DATE: **SIGNATURE**

NAME

GOVERNMENT SIDDHA MEDICAL COLLEGE, CHENNAI- 106

Post Graduate Department (Branch – II)
Name of the Disease : Kannaputru (Buccal cancer)
Name of the Medicine : Gurupathangam 35/65 mg bd with palm jaggary after meals

O.P. No:	Date	Religion
Name	Ph:	Address
Age/sex	e-mail :	
Occupation	Income/m:	
Marital status		
Habits		
Ht Wt	BMI	
PR: RR:	BP: HR:	

O/E Clinical signs:

Physique	Before treatment	After treatment	Note
Clubbing			
Pallor			
Cyanosis			
Venous pulse in neck			
lymphnode			
Ictrus			
Vitiligo			
Hyperkeratosis			
Migratory thombophelebitis			
Acanthosis nigricans			
Cvs			
Git			
Rs			
Ns			

Symptoms

Anaemia	Befoe treatment	After treatment	Note
Fever			
Purpura			
Mass in abdomen			
Dry persistant cough			
Haemoptysis			
Persistant mass			
Painless testicular			

swelling			
Jaundice			
Bladder symptoms			
Altered bowl habits			
Choronic backache			
Non healing ulcer			
Hyper pigmented itch skin			
Breast mass			
Post menopausal bleeding			
Post coital bleeding			

Investigations :

Blood	Before treatment	After treatment
Peripheral smear		
Tc		
Dc		
Esr		
Hb		
Sugar F/PP/R		
Urea		
Creatinine		

Urine	Before treatment	After treatment
Alb		
Sug		
Deposit		

Xray/USG/OTHERS	Before treatment	After treatment

	Before treatment	Afte treatment
Naa		
Niram		
Mozhi		
Vizhi		
Parisam		
Naadi		
Neerkuuri		
Neikuri		
Manikadainool		

VELLAI ERUKKAN[Calotropis gigantea.White Variety]

FIGURE: 1

PREPARATION OF DRUG







FIG-3

FIG:4

PARPAM

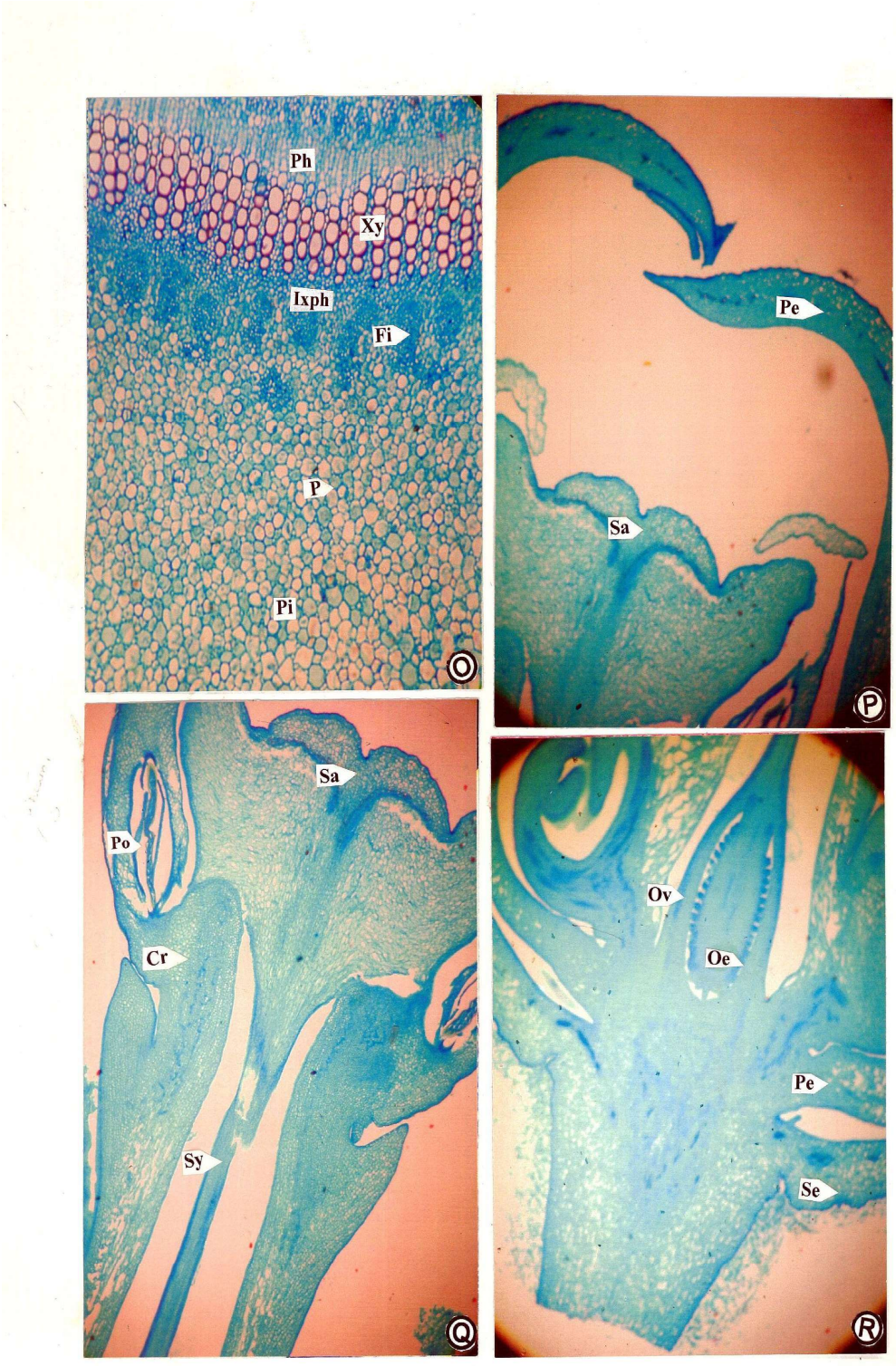


FIG:5

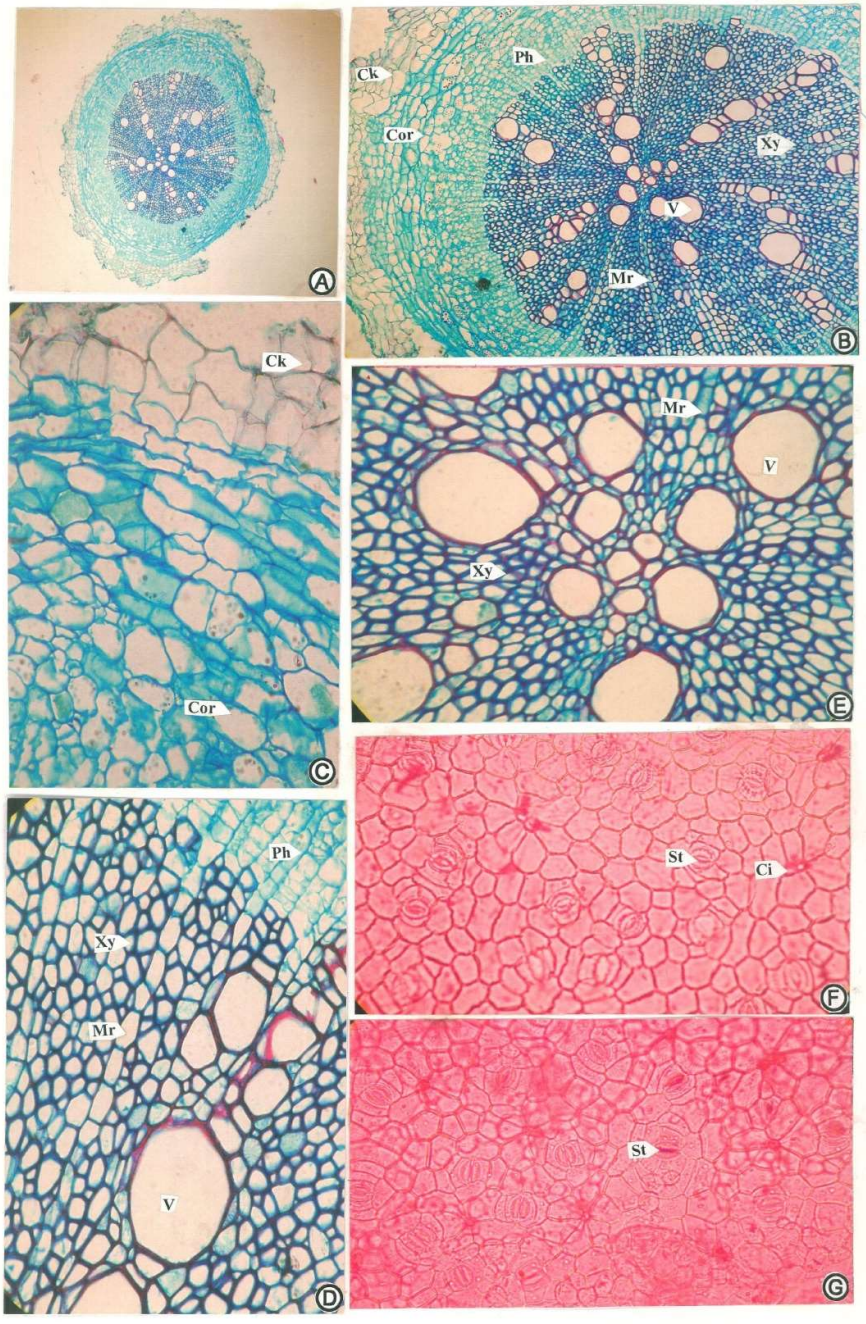
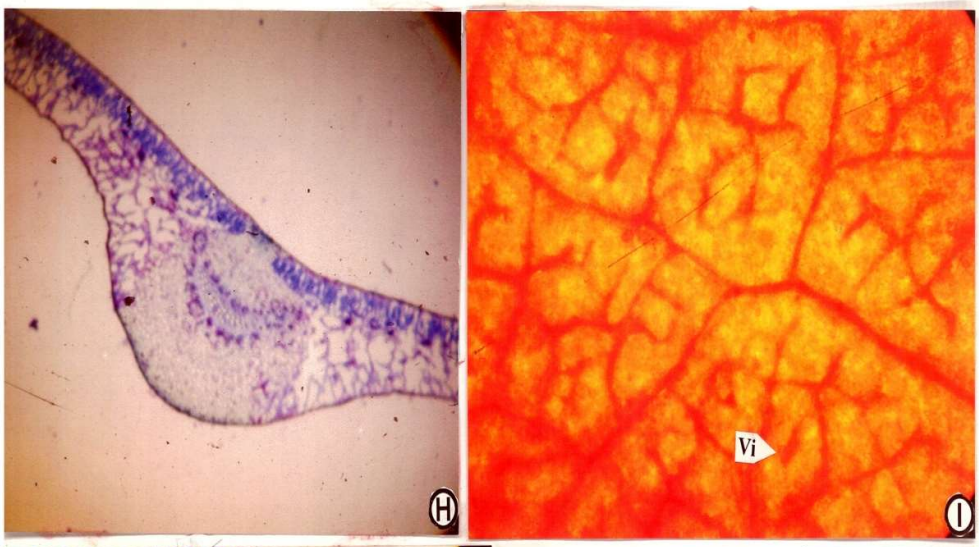


FIG: 6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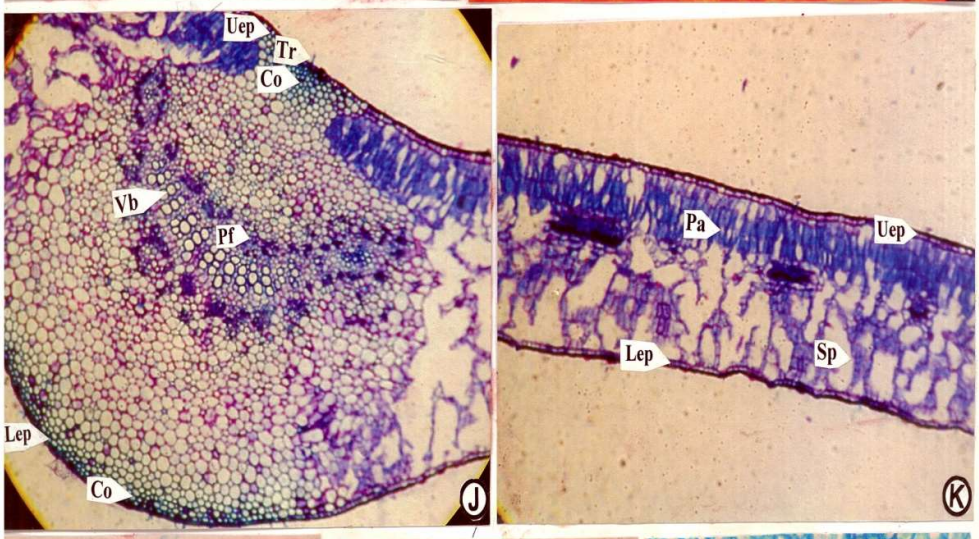
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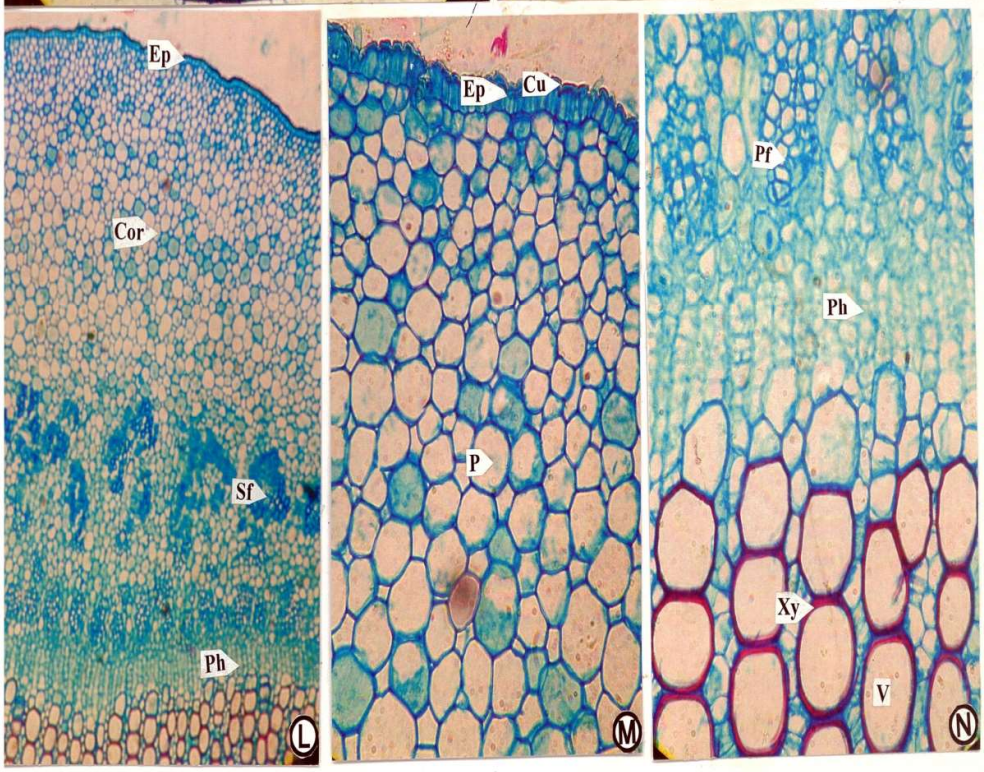
Ep
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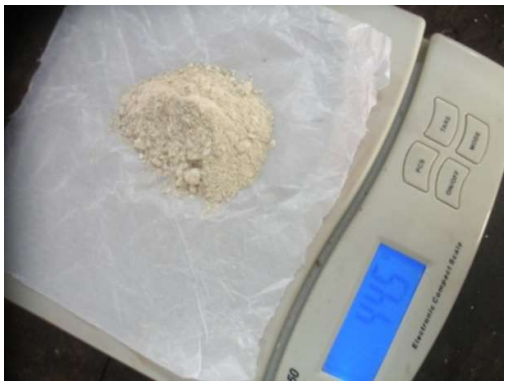
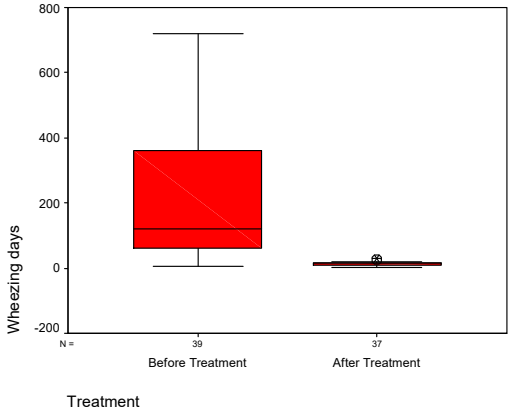
N

PARTS –I PHOTOS

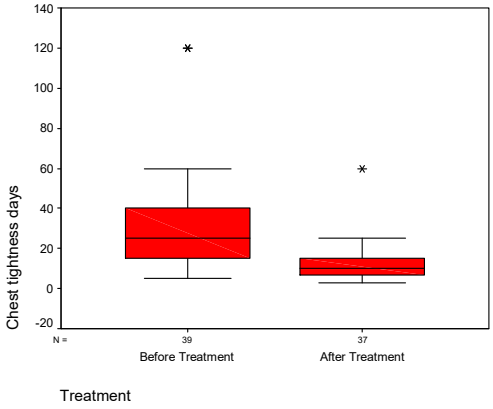
PART-II PHOTOS



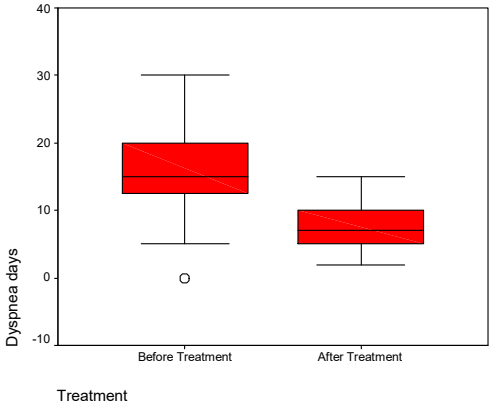
Wheezing days



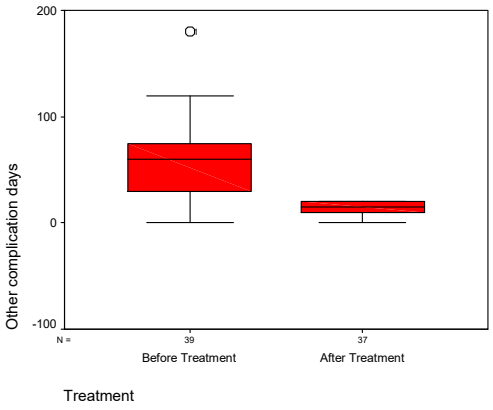
Chest tightness days



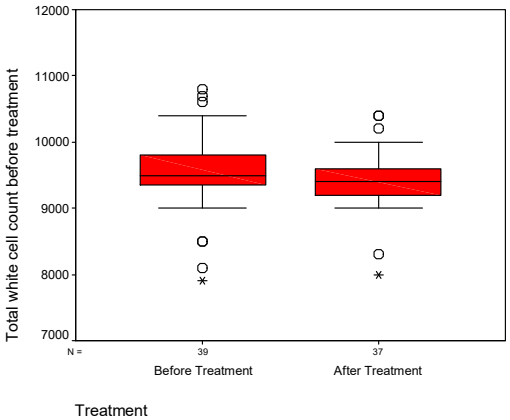
Dyspnea days



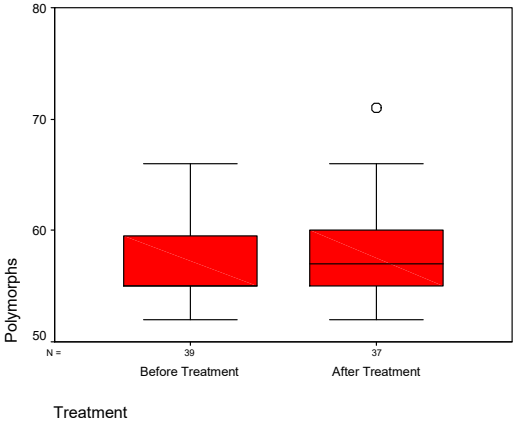
Other complication days



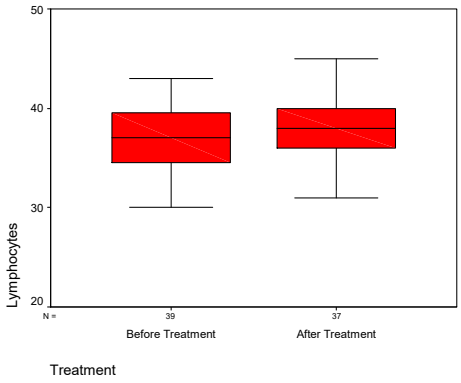
Total white cell count before treatment



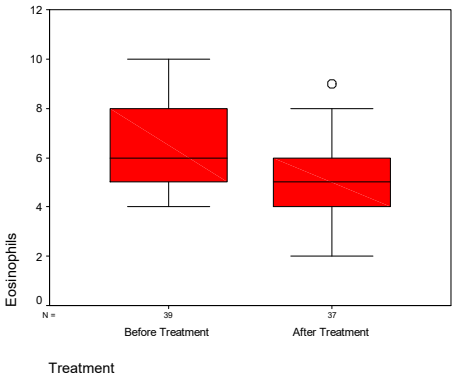
Polymorphs



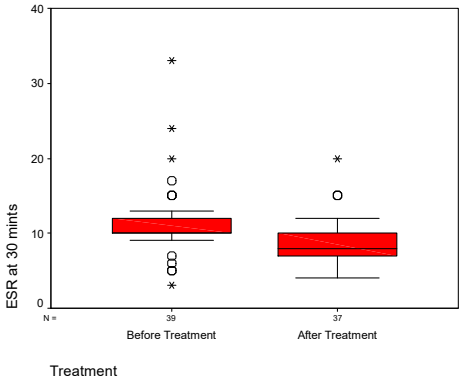
Lymphocytes



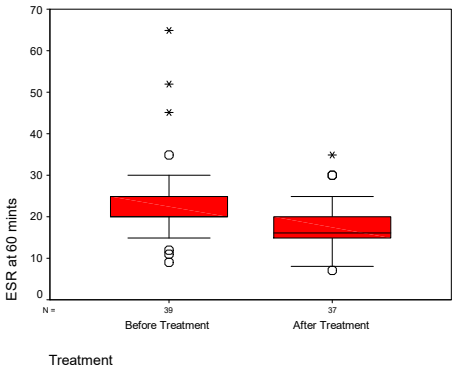
Eosinophils



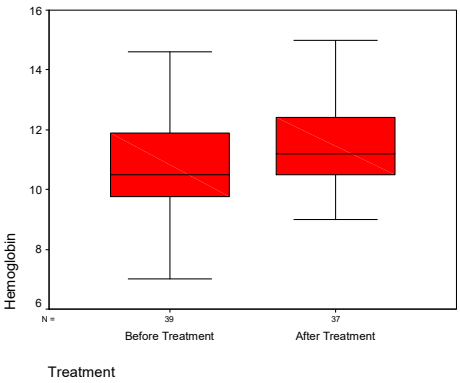
ESR at 30 mints



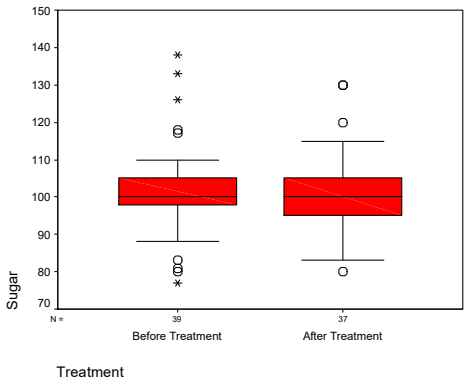
ESR at 60 mints



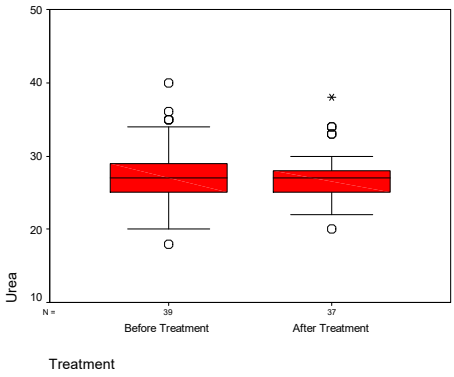
Hemoglobin



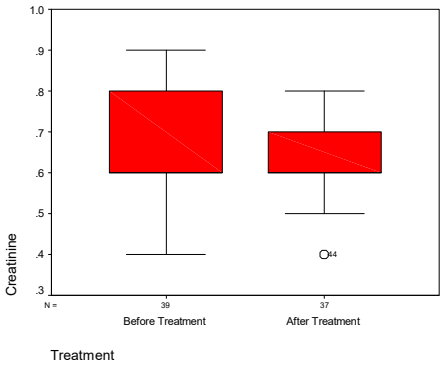
Sugar



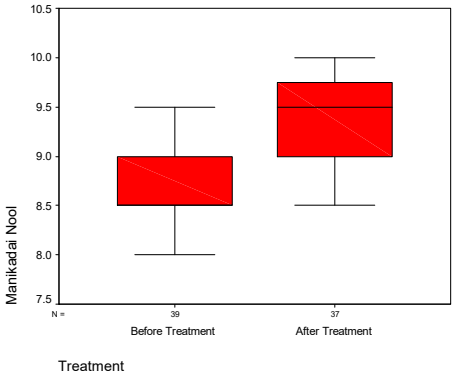
Urea



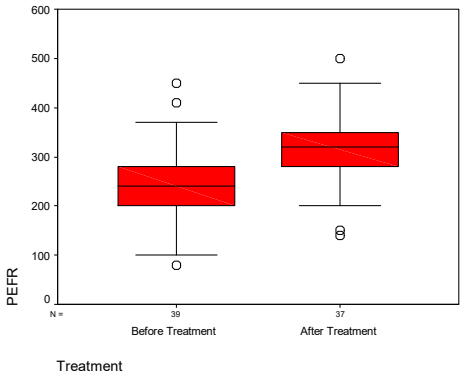
Creatinine



Manikadai Nool

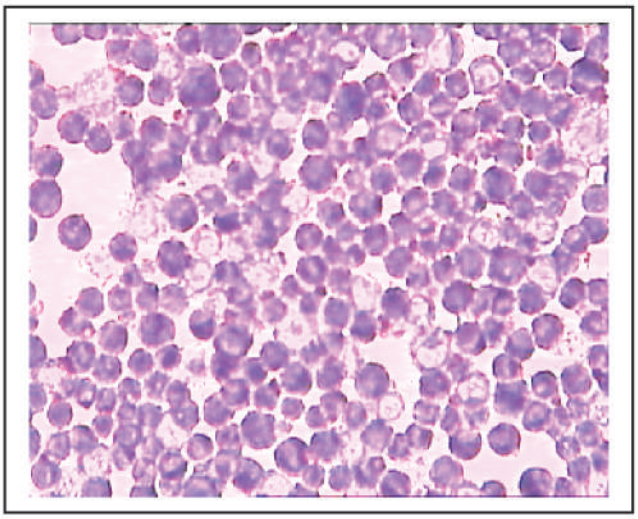


PEFR

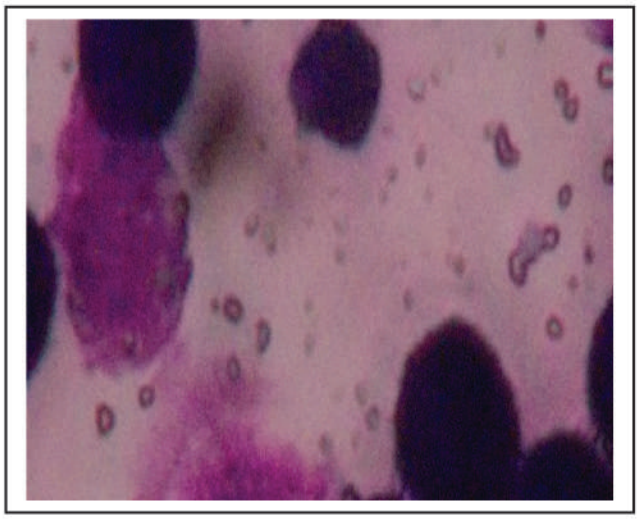


ANTI-CANCER ACTIVITY

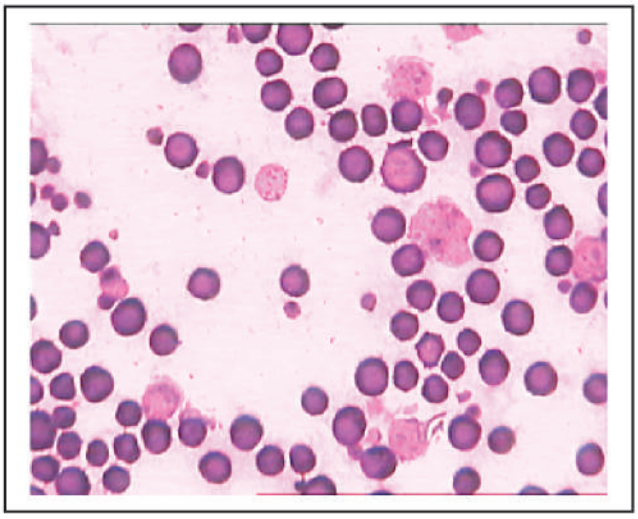
CANCER CONTROL



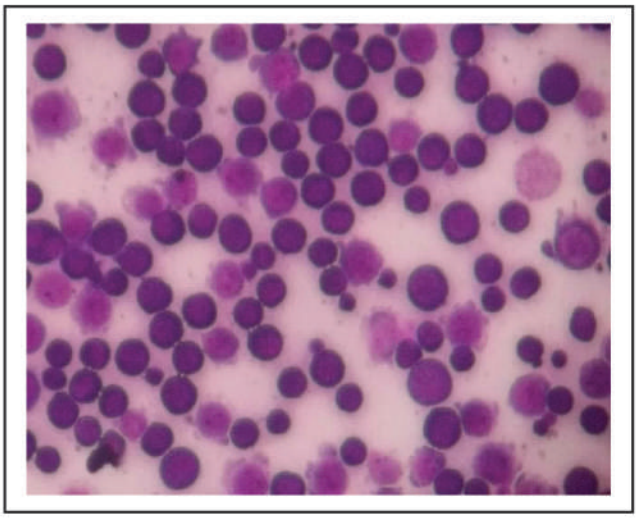
CANCER BT



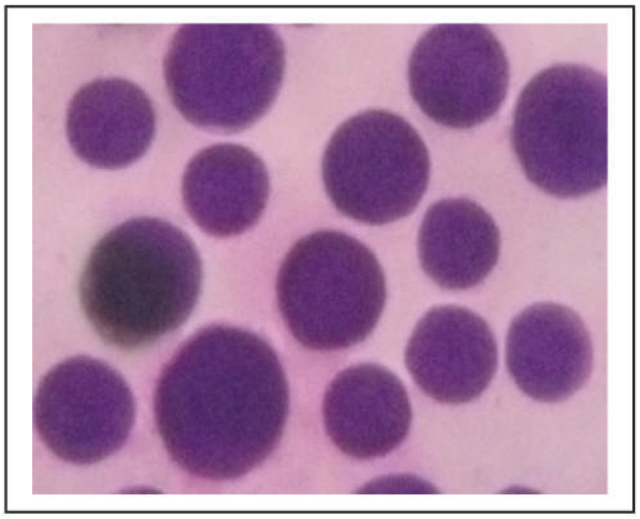
CANCER STANDARD



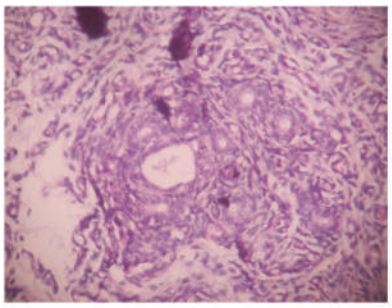
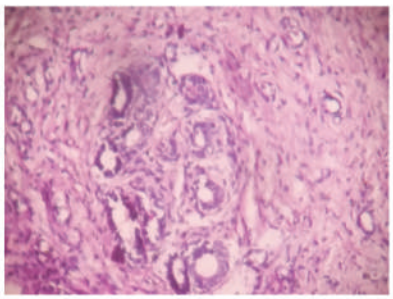
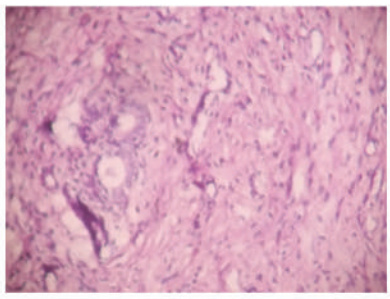
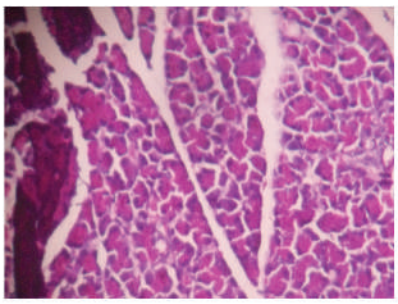
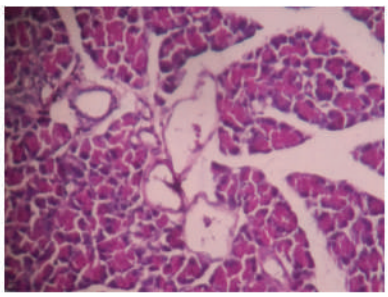
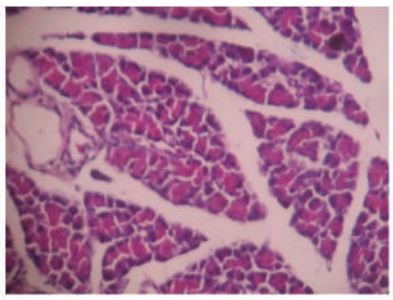
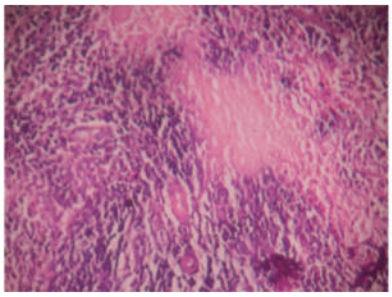
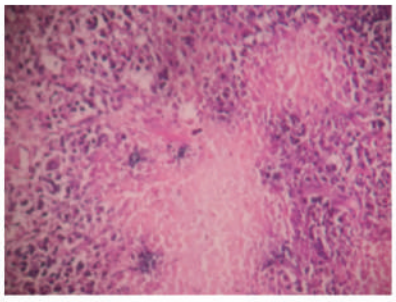
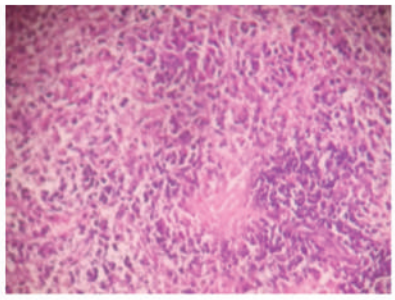
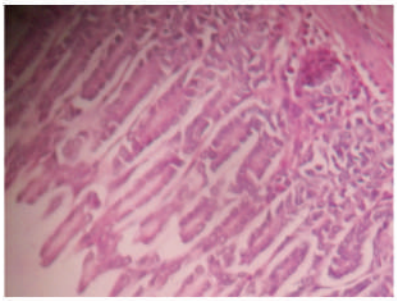
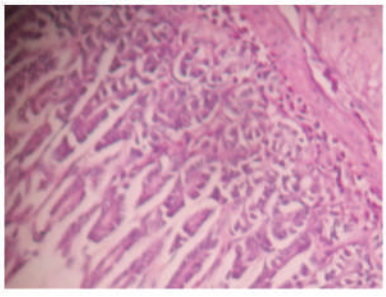
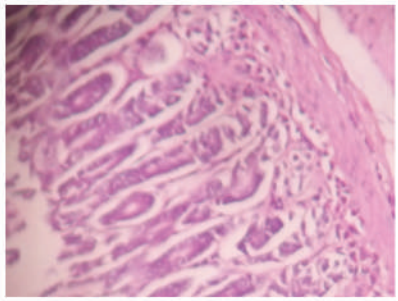
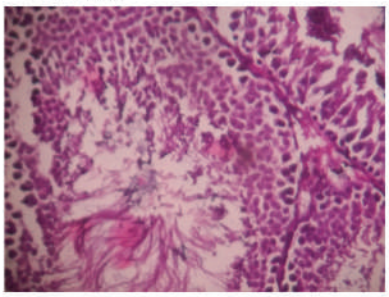
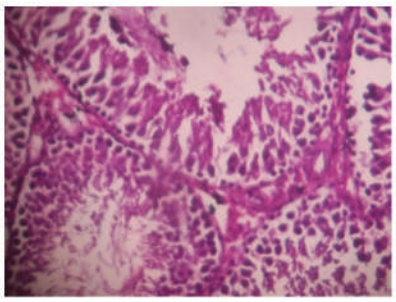
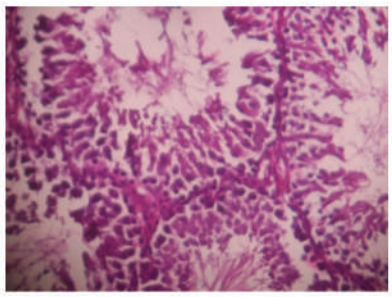
CANCER 3 TD DAYS AT



CANCE R 14 DAYS AT TD



SUBACUTE TOXICITY STUDY

	HIGH	MID	LOW
OVARY			
PANCREA			
SPLEEN			
STOMACH			
TESTIS			

CLINICAL STUDY

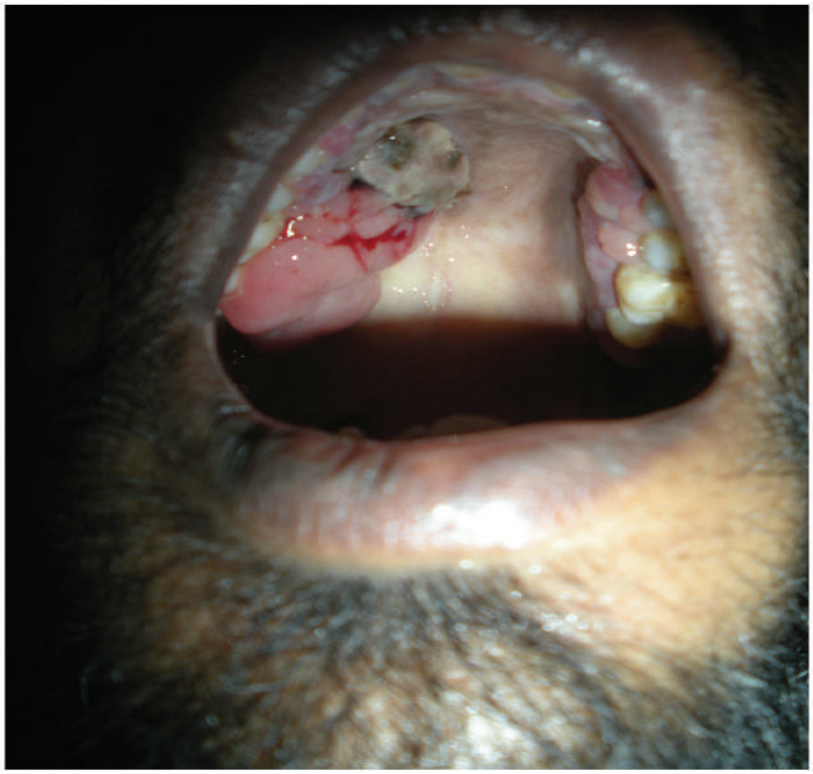
Sno	OP.NO.	Name	Age	Sex	BT_Whez	BT_Whez_Days	AT_Whez	AT_Whz_Days	BT_Chest_Tight	BT_Ch_Tight_Days	AT_Ch_Tight	AT_Ch_Tight Days	BT_Dyspnea	BT_Dysp_Days	AT_Dysp	AT_Dysp_Days	BT_Other_Comp	BT_Other_Comp_Days	AT_Other_Comp	AT_Other_Comp_Days	BT_TC	AT_TC
1	2302	James	36	1	Yes	42	no	15	Yes	42	no	5	yes	7	No	2	allergy	180	reduced	7	10200	9400
2	1942	Selvi	36	2	Yes	30	no	15	Yes	10	no	7	yes	30	No	10	allergy	60	reduced	10	9400	10200
3	9568	Selva kumar	28	1	yes	180	no	15	yes	50	no	120	no		no	1	allergy	30	NO	7		9400
4	9325	Vaiyapuri	55	1	yes	90	no	15	yes	60	Yes	60	yes	20	No	7	allergy	100	10400	10	10400	9200
5	8713	Amutha	36	2	yes	120	no	10	yes	120	yes	15	no	7	no	0	allergy	60	reduced	14	7900	8200
6	6161	Bharathi	23	2	Yes	720	no	21	Yes	120	Yes	20	yes	15	no	7	allergy	120	no	10	9200	9000
7	5221	Kathiravan	46	1	Yes	180	no	15	Yes	10	no	7	yes	15	No	7	allergy	60	reduced	20	9500	9000
8	490	Santhana krishnan	46	1	Yes	360	no	20	Yes	25	no	10	yes		No	7	allergy	50	reduced	15	9700	9600
9	1359	Lakshmi	35	2	Yes	180	no	15	Yes	60	reduced	15	yes	15	No	15	no	-	-	-	10200	9800
10	6546	Govinda raj	72	1	Yes	60	no	7	Yes	5	no	3	yes	15	No	5	no	-	-	-	10700	9500
11	8184	kanjana	43	2	Yes	20	no	7	Yes	7	no	3	yes	20	No	5	no	-	-	-	9200	9400
12	1020	santhiya	15	2	Yes	7	no	3	Yes	7	no	3	yes	7	No	3	no	-	-	-	9400	9200
13	1021	Kuppusamy	50	1	Yes	20	no	5	Yes	10	no	3	yes	10	No	4	allergy	60	NO	15	9800	9400
14	1943	delvanai	80	2	Yes	60	no	10	Yes	15	no	5	yes	10	No	5	no				9200	9000
15	9915	yelumalai	63	1	Yes	60	no	10	Yes	15	no	5	yes	10	No	5	allergy	120	reduced	15	10800	10400
16	8218	subiramaniam	72	1	Yes	180	no	7	Yes	30	reduced	5	yes	15		5	allergy	120	reduced	15	9800	9600
17	5478	santhinipandian	29	2	Yes	360	no	7	Yes	60	no	10	yes	15	No	7	allergy	100	reduced	20	8100	8000
18	5355	kumar	52		Yes	360	no	7	Yes	60	no	20	yes	30		10	allergy	90	reduced	20	9400	9200
19	9913	celton	14	2	Yes	120	no	10	Yes	40	no	15	yes	7		5	allergy	50	reduced	20	8500	8300
20	9070	ganapathy	74	1	Yes	360	no	30	Yes	50	no	20	yes	5	No	3	no	-	-	-	9000	9200
21	9660	revathy	37	2	Yes	360	no	20	Yes	15	no	10	yes	15	No	7	allergy	30	reduced	15	9500	9300
22	8962	roslein	16	2	Yes	180	no	15	Yes	20	no	10	yes	15	No	10	allergy	45	reduced	10	9700	9500
23	5074	neela	80	2	Yes	360	no	15	Yes	15	no	7	yes	20	No	10	allergy	40	reduced	15	9200	9400
24	8019	yavanaraj	57	1	Yes	60	no	15	Yes	20	no	7	yes	20	No	7	allergy	30	no	15	9400	9200
25	8249	mani	45	1	Yes	30	no	10	Yes	15	no	7	yes	10	No	5	allergy	20	reduced	10	9500	9200
26	3209	maheswari	35	2	Yes	180	no	15	Yes	20	no	10	yes	15	No	7	allergy	30	reduced	5	9800	9500
27	9831	Kaliappan	56	1	Yes	360	no	20	Yes	21	no	10	yes	15	No	5	allergy	60	reduced	15	9600	9400
28	8563	Bhavani	33	2	Yes	90	no	15	Yes	30	no	15	yes	20	No	5	allergy	30	reduced	10	9500	9200
29	9918	Santhi	45	2	Yes	100	no	25	Yes	40	no	25	yes	20	No	7	allergy	15	reduced	12	10600	10400
30	8238	Neelakandan	38	1	Yes	60	no	10	Yes	20	no	15	yes	15	No	5	allergy	30	reduced	10	9400	9600
31	7402	Rajesh	37	1	Yes	360	no	20	Yes	30	no	7	yes	20	No	5	allergy	90	reduced	15	9600	9500
32	383	kowsalya	62	2	Yes	180	no	15	Yes	30	no	10	yes	30	No	15	allergy	80	reduced	15	9300	9100
33	9619	Valarmathi	48	2	Yes	32	no	10	Yes	15	no	7	yes	20	No	7	allergy	60	reduced	10	9800	9600
34	251	Kamaraj	46	1	Yes	360	no	20	Yes	30	no	15	yes	15	No	10	allergy	120	reduced	20	9400	9500
35	8905	Dhanalakshmi	40	2	Yes	150	no	15	Yes	60	no	15	yes	21	No	10	allergy	80	reduced	20	10200	9800
36	7323	Mohan	36	1	Yes	60	no	15	Yes	30	no	10	yes	20	No	7	allergy	60	reduced	20	10100	10000
37	7606	abial	6	1	Yes	360	no	15	Yes	30	no	15	yes	25	No	10	allergy	90	reduced	20	8500	9000
38	385	sinkaram	49	1	Yes	60	no	20	Yes	20	no	10	yes	30	No	15	allergy	60	reduced	20	9500	9800
39	7210	dharunraj	13	2	Yes	150	no	15	Yes	20	no	7	yes	20	No	10	allergy	40	reduced	15	10200	9800
40	7345	charles	35	1	Yes	120	no	15	Yes	30	no	15	yes	25	No	15	allergy	60	reduced	20	9800	9600

CLINICAL STUDY

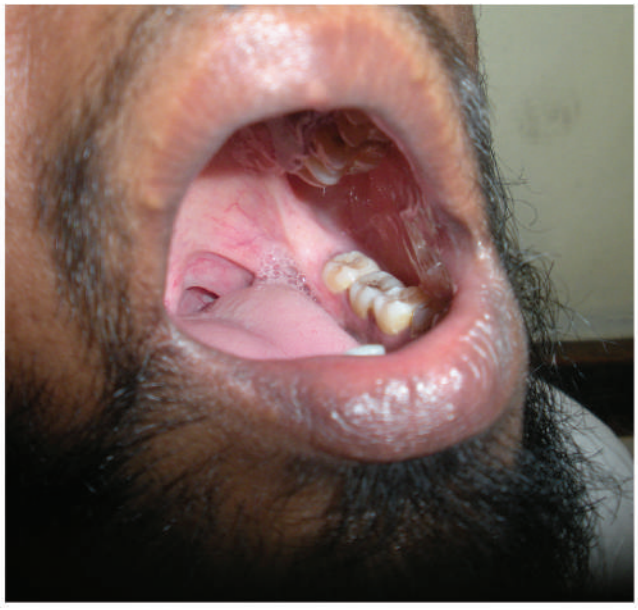
BT_Poly	AT_Poly	BT_Lymp	AT_Lymph	BT_Eosino	AT_Eosi	BT_ESR_0.5	BT_ESR_1	AT_ESR_0.5	AT_ESR_1	BT_Hb	AT_Hb	BT_Sugar	AT_Sugar	BT_Urea	AT_Urea	BT_Creat	AT_Creat	BT_MKN	AT_MKN	BT_PEFR	AT_PEFR	BT_X_Ray	AT_Xray	Result
60	58	33	38	7	6	15	25	5	7	13.4	15	100	110	36	34	0.6	0.5	8.5	10	150	460	normal		GOOD
54	55	41	42	5	4	3	12	20	10	7	15	99	100	28	30	0.7	0.6	9	9.5	250	350	normal		GOOD
	57		39	2	4			2	6		14.4	28	73	28		8.5	0.6	8.5	9.5	250	370	good		
66	71	30	38	4	5	10	20	5	14	14.6	12.4	99	83	25	26	0.8	0.4	8.25	9	250	320	normal		GOOD
55		39		6	20	33	65	7.8		8		98		23		0.7	0.6	8	8.5	280	350	normal		GOOD
54	55	42	42	4	3	5	11	4	8	10.8	11	88	90	25	26	0.6	0.8	8	8.5	200	250	normal		GOOD
57	60	35	38	8	5	5	9	5	9	12.6	13.5	80	85	27	25	0.6	0.7	8.5	9.5	150	300	normal		Good
55	58	35	33	10	9	10	20	8	15	10	10.2	100	105	25	27	0.8	0.6	9	9.5	200	250	normal		good
62	66	34	36	4	6	17	35	12	24	11.4	12	105	90	24	26	0.6	0.7	8.5	9.5	240	300	dilated veins		moderate
64	63	31	34	5	3	20	45	15	30	12	13	118	110	25	28	0.5	0.6	8.75	9	190	220	normal		Good
57	59	38	38	5	3	24	52	15	35	11.2	12	77	80	20	24	0.4	0.6	9.5	10	180	230	normal		Good
52	56	40	40	8	4	10	25	7	15	12.6	13	83	85	18	20	0.6	0.6	8.5	9.5	240	320	-		Good
55	56	39	39	6	5	7	15	5	12	13	13.2	138	130	27	25	0.8	0.6	8.5	9	350	400			Good
55	53	39	42	6	5	12	25	10	20	9	9.5	117	115	25	23	0.6	0.5	8	8.75	200	280	ch.bronchitis		Good
64	63	31	31	5	4	9	20	7	15	13.4	13.6	133	130	40	38	0.8	0.7	8.25	9.25	340	400	normal		Good
59	60	37	38	4	4	6	15	5	10	12.4	12	81	85	24	23	0.5	0.6	8.75	9.5	100	150	ch.bronchitis		Good
54	52	42	45	4	3	12	18	10	16	9	10	88	85	29	25	0.5	0.6	8.25	9.75	250	400	normal		Good
55	53	40	42	5	5	10	20	7	14	9.5	10.5	100	105	25	25	0.7	0.6	8.5	9	370	400	normal		Good
53	55	40	40	7	5	12	25	7	15	10	10.5	95	93	28	25	0.6	0.7	8.5	9.5	200	350	normal		Good
52	55	43	40	5	5	15	30	7	15	12	12.5	98	95	25	22	0.8	0.7	8.5	9	210	280	nomal		Good
55	53	40	42	5	5	10	20	8	16	10	11	99	98	28	25	0.5	0.6	9	9.5	200		normal		Good
60	58	33	37	7	5	12	25	8	15	11	11.2	100	102	24	26	0.6	0.8	8.5	9	320	350	normal		Good
56	55	38	40	7	5	9	18	15	30	9.5	10	100	110	25	27	0.9	0.8	9	10	80	200	ch.bronchitis		moderate
60	58	30	34	10	8	10	20	8	16	10	11	105	100	29	28	0.6	0.7	8.75	9.5	300	350	ch.bronchitis		moderate
55	58	35	35	10	7	12	25	10	20	9.5	10	105	100	35	33	0.8	0.7	9.5	10	450	500	nomal		Good
58	57	35	37	10	6	10	20	8	16	8.5	9	98	95	34	30	0.9	0.7	9.5	10	200	300	normal		Good
60	58	30	34	10	8	12	25	8	16	10	10.5	110	105	28	26	0.8	0.6	8.5	9.5	320	400	normal		Good
55	58	35	35	10	7	12	25	10	20	9.5	10	105	100	35	33	0.8	0.7	9.5	10	250	350	normal		Good
64	62	31	35	5	3	12	25	9	18	11.8	12	100	95	30	28	0.5	0.6	8.5	9	250	350	normal		Good
59	60	37	38	4	2	9	20	8	16	12.2	12.5	126	120	35	34	0.5	0.5	8.75	9.25	280	340	normal		Good
55	55	35	37	10	8	13	26	10	20	11	12	110	105	25	28	0.6	0.5	8.25	9	150	270	normal		Good
57	55	38	40	5	5	12	25	11	22	10.5	11	100	102	25	28	0.8	0.8	9	10	280	320	normal		Good
55	57	35	37	10	6	9	18	7	14	10.2	10.5	110	100	25	28	0.6	0.7	8.5	9	220	300	normal		Good
58	60	37	36	5	4	10	20	8	16	11.5	12	105	100	28	30	0.7	0.5	8.5	9	410	450	normal		Good
60	60	33	35	7	5	12	25	10	20	10.5	11	110	105	25	28	0.7	0.8	8.5	9	200	300	normal		Good
55	57	37	37	8	6	10	20	10	20	11.2	11.5	105	110	30	28	0.5	0.6	8.75	9.25	320	370	normal		Good
55	53	38	40	7	7	15	30	12	25	9.5	10	95	100	25	27	0.5	0.6	8	8.5	100	140	normal		Good
55	52	38	42	7	6	12	25	9	18	10	10.5	105	100	28	26	0.7	0.8	9	9.5	250	320	normal		Good
52	55	40	40	8	5	10	20	9	18	11	11.2	99	95	30	28	0.6	0.7	9.5	10	260	340	normal		Good
55	53	40	43	5	4	10	20	9	18	10.4	10.8	100	105	27	26	0.9	0.8	9	9.75	240	320	normal		Good

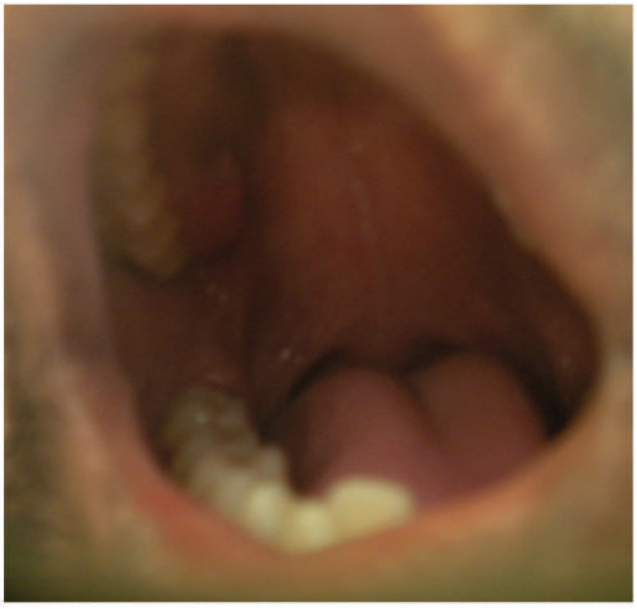
CLINICAL STUDY

BEFORE TREATMENT



AFTER TREATMENT





Peakflow Meter