CLINICAL EVALUATION OF SIDDHA DRUG "KOOZHPAANDA CHOORANAM" IN THE TREATMENT OF AZHAL KALLADAIPPU NOI (RENAL CALCULI)

The dissertation submitted by,

Dr.M.Ponmozhi

Under the guidance of

Prof.Dr.N.Periasamypandian.M.D.(S),

H.O.D, Department of MARUTHUVAM,

National Institute of Siddha, Chennai-47.

Dissertation submitted to

THE TAMILNADU DR.M.G.R.MEDICAL UNIVERSITY

CHENNAI-600032

In partial fulfillment of the requirements

For the award of the degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH I– MARUTHUVAM DEPARTMENT

2013-2016

NATIONAL INSTITUTE OF SIDDHA

CHENNAI-600047.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI – 32

A STUDY ON

AZHAL KALLADAIPPU

(DISSERTATION SUBJECT)

For the partial fulfillment of the

Requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH I– MARUTHUVAM DEPARTMENT

2013-2016

BONAFIDE CERTIFICATE

Certified that I have gone through the dissertation submitted by Dr.M.Ponmozhi (Reg.no : 321311206), a student of final year M.D(S), Branch-I, Department of Maruthuvam, National Institute of Siddha, Tambaram sanatorium, Chennai-47, and the dissertation work has been carried out by the individual only. This dissertation does not represent or reproduce the dissertation submitted and approved earlier.

Place : Chennai-47

Date:

Head of the Department,

Department of Maruthuvam,
National Instiute of Siddha,
Chennai-47.

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

I first of all express his deep sense of gratitude to the **Almighty** for all his many fold of mercies.

I wish to express gratitude and acknowledgement to the **Ministry of AYUSH,** Health & family welfare, New Delhi.

I wish to express my sincere thanks to the **Dr.S.Geethalakshmi.M.D,Ph.D.,** Vice chancellor, The Tamilnadu Dr.M.G.R. Medical University, Chennai.

I express my heartful gratitude to the **Prof.Dr.V.Banumathi.M.D.(S),** Director , National Institute of Siddha, Chennai-47, for arranging the facilities for successful completion of my project.

I would like to express my heartful thanks to our respectable **Prof.N.Periasamypandian.M.D.(S),** Associate professor, Head of the department, Department of Maruthuvam, National Institute of Siddha, Chennai-47, for his valuable guidance to complete my dissertation.

I express my healthy thanks to **Dr.S.Mathivanan.M.D(S),** Associate professor, Department of Maruthuvam, National Institute of Siddha, Chennai-47, for his valuable suggestion and encouragement.

I express my grateful thanks to Prof. **Dr.S.Mohan M.D.(S),** Former Director and Head of the department,Deparment of Maruthuvam, National Institute of Siddha, Chennai-47, for granting permission to undertake a study in this dissertation topic and also for providing all the basic facilities in order to carry out this work.

I express my sincere thanks to **Dr.M.Rajasekaran.M.D.(S),** Professor, Head of the department, Department of Gunapadam, National Institute of Siddha, Chennai-47, for his guidance in the raw drug collection and preparation of the trial drug.

My my deep sense of gratitude to **Dr.T.Lakshmikantham.M.D(S),** Lecturer, Department of Maruthuvam, National Institute of Siddha, Chennai-47, for her valuable guidance and support.

My deep sense of gratitude to **Dr.H.Vethamerlinkumari.M.D(S),** Lecturer, Department of Maruthuvam, National Institute of Siddha, Chennai-47, for her valuable guidance, support and encouragement.

My deep sense of gratitude to **Dr.H.Nalinisofia.M.D(S)**, Lecturer, Department of Maruthuvam, National Institute of Siddha, Chennai-47, for her valuable guidance and suggestion.

I express my thanks to **Dr.D.Aravind.M.D(S),** M.Sc, Associate professor, Department of Medicinal botany, National Institute of Siddha, Chennai-47, for his guidance in authentication of herbal drugs.

I express my sincere thanks to **Mr.M.Subramaniyan.M.Sc**, SRO, National Institute of Siddha, Chennai-47, for his guidance in statisticial analysis.

I express my sincere thanks to **Dr.Sangeetha.M.B.B.S**, Lecturer, Modern medicine, National Institute of Siddha, Chennai-47, for her valuable suggestion.

I wish to thank **Dr.A.Muthuvel.BSMS, M.Sc, Ph.D,** (Biochemistry), Lecturer, National Institute of Siddha, Chennai-47, for his guidance in bio chemical analysis.

I wish to thank **Dr.P.sathyarajeshwaran**, Assistant Director (Scientist 2) i/c and **Sreemathi.R.Shakila**, Siddha Central Research Institute, Arumbakkam, Chennai-106, for their help in Physicochemical analysis and HPTLC report.

I also thank **Mr.Sridhar** and other technicians of clinical pathology laboratory, and Biochemistry department.

I wish to thank all library staffs.

I express my heartful thanks to **My parents, sisters and friends** for their continuous help and encouragement to do this dissertation work.

CONTENTS

S.NO	TITLE	PAGE NO
1	**INTRODUCTION**	1
2	**AIM AND OBJECTIVES**	4
3	**REVIEW OF LITERATURE**	
	(A) SIDDHA ASPECT	5
	(B) MODERN ASPECT	29
4	**MATERIALS AND METHODS**	53
	I. PREPARATION & PROPERTIES OF TRIAL DRUG	62
	II. BIOCHEMICAL ANALYSIS OF TRIAL DRUG	80
	III. PHYSICO CHEMICAL ANALYSIS OF TRIAL DRUG	86
5	**OBSERVATION AND RESULTS**	89
6	**DISCUSSION**	116
7	**SUMMARY**	122
8	**CONCLUSION**	124
9	**ANNEXURES**	
	I. PROFORMA	125
	II. CERTIFICATES	157
10	**BIBLIOGRAPHY**	169

INTRODUCTION

INTRODUCTION

Siddha system is an ancient system of medicine prevalent in south India. The word siddha comes from the Tamil word for perfection.

Siddhars are the forerunner of this system who are the divine persons attained siddhi and siddha system of medicine was inherited by them from Lord siva.

Thus, the siddhars have set themselves a very high aim for protecting the mortal body free from the ravages of old age and death. Therefore the concept of siddha system of medicine is “to treat the man as a whole and not merely the disease alone”.

In siddha medicine, the individual is a microcosm of the universe. The human body consists of the five primordial elements .These are earth, water, fire, air and space.

பாரப்பா பூதமைந்து மண்நீர் தேயு
பரி வாயு வாகாய மைந்தினாலே
சேரப்பாசடமாச்சி...

- சதகநாடி

According siddha system the human body has the three elements vatha, pitha and kapha. The equilibrium of humours is considered as health and its disturbance or imbalance leads to a diseased state.

Vatha, pitha and kapha have multiple significance and are symbolical in terms.

- Vatha represents vayu, mind, dryness, pain, flatulence, sensitiveness, lightness, and also air.
- Pitha represents gastric juice, bile, energy, heat, inflammation, anger and irritation.
- Kapha represents feeling of cold, heaviness, running of the nose, passing of mucoid discharge and also the saliva.

According to the siddha medicine various psychological and physiological functions of the body attributed to the combination of seven elements.

First is saaram (plasma) responsible for growth, development and nourishment.

Second is Cheneer (blood) responsible for nourishing muscles, imparting colour and improving intellect.

The third is Oon (muscle) responsible for shape of the body.

Fourth is Kolluppu (fatty tissue) responsible for oil balance and lubricating joints.

Fifth is Enbu (bone) responsible for body structure, posture and movement.

Sixth is Moolai (nerve) responsible for strength and the last is Sukila (semen) responsible for reproduction.

Siddha medicine aims at the immortality of the body and soul.

Siddhars classified the diseases into 4448 and established a separate chapter which deals with Renal Diseases on the basis of Vatha, Pitha, and Kabha humours.One such clinical entity is kalladaippu mentioned in Yugi Vaithiya Chindhamani. Yugi munivar further classified kalladaippu into 4 types and Azhal kalladaippu is one among them.

Nephrolithiasis or urolithiasis is formation of urinary calculi at any level of the urinary tract. Urinary calculi are worldwide in distribution but are particularly common in some geographic locations such as in parts of the United States, South Africa, India and South- East Asia.

Dehydration from low fluid intake is a major factor in stone formation. High dietary intake of animal protein, sodium, refined sugars, fructose, high fructose corn syrup, oxalate and grapefruit juice may increase the risk of kidney stone formation.

It is estimated that approximately 2% of the population experience renal stone disease at sometime in their life with male-female ratio of 2:1.

The peak incidence is observed in 2nd to 3rd decades of life.

The incidence of urinary tract stone disease is increasing. According to the National Health and Nutrition Examination Survey, as of 2012, 10.6% of men and 7.1% of women in the United States are affected by renal stone disease, compared to just 6.3% of men and 4.1% of women that were affected in 1994.

The main Ingredients of the siddha formulation are Venpoosani (Benincasa hispida), Shanpaga poo (Mychelia champaca), Seeragam (Cuminum cyminum), Kadukkai (Terminalia chebula) is well known for its Diuretic and Lithotriptic action.

The preparation is simple, easily available and cost effective. So I have chosen KOOZHPAANA CHOORANAM in the treatment of AZHAL KALLADAIPPU for my dissertation work.

AIM AND OBJECTIVES

AIM AND OBJETIVES

AIM:

Clinical evaluation of siddha drug "KOOZHPAANDA CHOORANAM" (internal) in the treatment of Azhal kalladaippu noi (Renal calculi).

OBJECTIVES:

1. **Primary objective:**

   To study the siddha formulation 'KOOZHPAANDA CHOORANAM' in the treatment of AZHAL KALLADAIPPU (RENAL CALCULI) for the Clearance/reduction in the size of renal calculus.

2. **Secondary objective**:

   To study azhal kalladaippu, on the basis of Envagai thervu, mukkutram, kalam, naadi, neerkuri, neikuri, etc,, in order to evaluvate the pathology.

   To Study the siddha cofactors related to the diseases such as age, sex, food habits, occupation ect….

REVIEW OF LITERATURE

SIDDHA ASPECT

SIDDHA ASPECT

AZHAL KALLADAIPPU

Siddhars classified the diseases into 4448 and described each one separately and elaborately. They classified the disease on the basis of Vatha, Pitha and Kabha humours.

The disease kalladaippu is placed under Neerinai Arukkal noi (Oligurial diseases).This has been mentioned by Therayar in his “Theran karisal” as follows,

நீரிரு வினை குணத்தை நீயறிவித்து சொல்வாம்

நீரினை பெருக்கலொன்று நீரினையருக்க லொன்று

நீரிழிவுடனே கொல்லும் நீர்க்கட்டு வினைகளொன்று

-தேரன் கரிசல்

As per Yugi Vaithiya Chinthaamani, Kalladaippu is classified into 4 types. Azhal Kalladaippu is one among the four types of Kalladaippu.

தோன்றினதோர் நாலினிட நாமங் கேளாய்

சிருக்கான வாதத்தின் கல்ல டைப்பு

பூன்றியதோர் பித்தத்தின் கல்ல டைப்பு

புரண்டதோர் சேத்துமத்தின் கல்ல டைப்பு

-யூகி வைத்திய சிந்தாமணி

Kalladaippu:

Definition:

As per the siddha text “SIDDHA MARUTHUVAM ”(Author: Dr.Kuppusamy), there is gradual or sudden obstruction to the flow of urine, pain with burning sensation in the urethral tract, low back pain, renal angle pain and sand like crystal deposit in the urine are the characteristic features of kalladaippu.

Pothu Kurikunangal:

According to the text of siddha maruthuvam (pothu)

- Gradual or sudden obstruction to flow of urine.
- Unbearable pain (agonizing pain) in the penis.
- Excruciating pain and swelling is experienced at tip of penis if the calculus attempts to expel.
- Burning and scanty micturition and haematuria.
- Colicky pain radiating from loin to groin, lower abdomen,urethra, and genitalia if the calculus irregular with sharp projection.

Etiology:

According to Yugi Vaithiya Chinthamani,

கலங்கின தோர்தண்ணீர்தான் குடித்த பேர்க்கும்
கல்லெலும்பு மயிர்மண்தான் கலந்தன் னத்தில்
அலங்கின தோரன்னங்க ளருந்த லாலும்
அழுகலோடு முற்றபண்ட மருந்த லாலும்
மலங்கின தோர்மாப்பண்ட மருந்தலாலும்
மந்தத்தில் வாய்வானப தார்த்தந் தன்னை
துலங்கின தோருசிதன்னிற் சுவைத்த லாலும்
சுருக்காய் கல்லடைப்புவந்து தோன்றுந் தானே

-யூகி வைத்திய சிந்தாமணி.

As per yugi vaithiya Chinthamani, Kalladaippu is due to,

- Intake of turbid water,

- Food contaminated with stones, bones, hair and sand,

- Intake of putrified food stuff and starch substances,

- Eating flatulence producing food while indigestion.

தெளிந்ததோர் கல்லடைப்புற் பத்தி கேளாய்

சிறிதுநாட் டுடங்கியே மேகந் தன்னால்

தளிந்ததோர் சலப்பையிலு திரந் தோய்ந்து

சந்த சந்தாகவே பருத்துக் கொள்ளும்

வளிந்ததோர் வாதபித்தங் கோபித் தக்கால்

வந்து பெருங்கல்லாய் நீர்வழி யடைத்து

நளிந்ததோர் நாலுவிதக் கல்லடைப்பு

நண்பான வரலாறு நாட்டக் கேளே

- யூகி வைத்திய சிந்தாமணி

Yugi Mamunivar has revealed about this disease since 14th century. Yugi Mamunivar Mentioned the following symptoms, blood clot in the urinary bladder due to urinary tract diseases followed by distension of urinary bladder, urinary stone formation in urinary tract by humour of Vatham and Pitham.

நாட்டமாய் கற்பழித்துக் கடனை வாங்கி

நலிபண் ணிக்கொடாமல் வழக்கு பேசி

கூட்டமாய் குருவுடைய கடமை தன்னைக்

கொடாமலே கைக்கொண்ட கொடுமை யோர்க்கும்

வாட்டமாய் வரம்புதப்பி திரிந்த பேர்க்கும்

மாறுபாடா யெடுத்துப்பொ ருள்க டனைக்

காட்டியே கைக்கொண்டுக படு பண்ணும்

காலாந்தர் கல்லடைப்பிற் கலங்கு வாரே

- யூகி வைத்திய சிந்தாமணி

The above mentioned poem explains the status of mind plays a major role in causing many diseases and connection between body and soul is established .i.e. the mukkutram deranged by internal forces such as sexual perversion,anger and robbery.

According to siddha maruthuvanga churukkam,

“நீரினைத் தடுத்தல் செய்யின்
நீர்க்கட்டுத் துவாரம் புண்ணாம்
பாறிடுஞ் சந்து சந்தில்
பண்புறு நோவதாகும்
நேரிலங்கயருங் காமியம்
நிச்சய நோதல் செய்யும்
பாரினி லபான வாயு
பண்புறச் சேரு மன்றே”

-சித்த மருத்துவாங்கச் சுருக்கம்

Siddha maruthuvanga churukkam explained that urination is one of the 14 visceral refelexes. When one suppresses the visceral reflex it lapses into manifestation of morbidty, which comprises the inflammation of bladder, Anuria, Arthralgia, pain in genital region and deranged keezhnokkum kaal leads to the formation of Calculus.

“சுக்கிலந் தனையடக்கின்
சுரமுடனீர்க் கட்டாகும்
பக்கமாங் கைகால் சந்து
பாரநோய் வழியிறங்கும்
மிக்கமார் நோயுண்டாகும்
மிகுந்திடும் பிரமேகந்தான்
தக்கதோர் போதுமாகின்
தரித்திடும் வாயுக் கூறே”

-சித்த மருத்துவாங்கச் சுருக்கம்

The author explains that ejaculation of semen is one of the 14 visceral reflexes.When one suppresses this visceral reflex , it causes fever, retention of urine which favours urinary calculi, chest pain, arthralgia and white discharge.

According to Noi Vilakkam,

கரு நீரடக்கல் விரையில் அடிபடல்

நீரியந்தாக் கல் சிறுநீரடக்கல்

வளி நோய் மிருக்கு முணவும் ஒழுக்கமும்

கடைப் பிடித்திடுதல் மேகமுதற் பல

பிணியுறல் எழுமிவை யடிப்படையாகக்

கல்லடைப்பு யென்னுங் கடும்பிணி விளையும்

வளியது மீறியே யொடு மல்லாது

கருநீ ரொடுங் கலந்து நீரகத்துச்

சிறுநீர்க் கழிவு தொடுத்தலாலும்

அன்னவை கல்லெனத் திரளுமென்ப

-நோய் விளக்கம்

- Trauma on testes, Suppression of urine and semen
- Derangement of humour in blood
- Excessive indulgence in sexual activity or sexual perversion
- Inflammation of bladder
- Syphilis(Mega Noi), Stagnation of urine in urinary tract
- Dryness of semen causes the formation of stones
- Increased intake of food that cause flatulence.

Classification:

Classification Of kalladaippu In Yugi Vaithiya Chinthamani:

தோன்றினதோர் நாலினிட நாமங் கேளாய்

சுறுக்கான வாதத்தின் கல்ல டைப்பு

பூன்றியதோர் பித்தத்தின் கல்ல டைப்பு

புரண்டதோர் சேத்துமத்தின் கல்ல டைப்பு

தீன்றியதோர் தொந்தமாங் கல்ல டைப்பு

தேகத்திற் பற்றியேசி றிது காலம்

தான்றியே சலப்பையில் வந்தி ழிந்து

சருவியே லிங்கத்திற்ற ரிக்குந் தானே

- யூகி வைத்திய சிந்தாமணி

There are four types of Kalladaippu according to Yugi Vaithiya Chinthamani

1. Vali kalladaippu
2. Azhal kalladaippu
3. Iyya kalladaippu
4. Thontha kalladaippu

வாத கல்லடைப்பு

தரித்து நாபிக்குங்கீழ் சுருக்காய் குற்றிச்

சலமலந்தான் வீழாமற் றம்ப மாகி

வரித்துமே லிங்கத்தில் வலியு மாகி

மருவியதோர் பொத்தியெலாஞ் சுரந்து கட்டி

திரித்தியே கிடைகொடாப் பிரட்ட லாகித்

தேம்பியே மூச்சுமாய் வயிறு முப்பும்

உரித்ததோர் சதைபோல உவர்ப்பு மாகும்

ஓங்கியதோர் வாதக்கல்ல டைப்பு தானே

- யூகி வைத்திய சிந்தாமணி

In Vali Kalladaippu, pain is felt just below the umbilical region and penis. It is characterized by Severe colic pain, Dyspnoea, Abdominal distension, Oliguria and Constipation.

பித்த கல்லடைப்பு

அடைப்பாகி சலந்தானு மருவ லாகி

அயங்காச்சிச் சொருகினாற் போலே காணும்

புடைப்பாக பொற்றியெங் கும்பு முக்கமாகிப்

பூட்டுபோல் பிகுவாகிப் பிரட்டலாகும்

மடைப்பாகி உதிரநிற மாய்க்கல் லாகி

வந்திழிந்து லிங்கத்தில் மாட்டிக் கொள்ளும்

குடைப்பாகி குற்றலாய்க் கூச்சலாகிக்

குதட்டுமே பித்தக்கல் லடைப்பு தானே

- யூகி வைத்திய சிந்தாமணி

Azhal Kalladaippu is characterized by, reduced urine output with characteristic burning sensation (similar to introducing a red-hot iron needle into the urethra),blood stained coloured stones which blocks the ureter causing pricking pain and tenderness.

சேத்தும கல்லடைப்பு

தானான தொப்புளிலே வில்லு போலச்

சலியாமற் சுரந்துமே சற்றே குற்றும்

ஏனான காலோடு கைகள் சந்து

இடுப்புதான் குடைச்சலாயி சிவு காணும்

வேனான லிங்கத்தின் வெண்மை தன்னில்

விறுவிறென் றேகடுப்பாகி வியர்வை யாகும்

தேனான வெளுப்புக்கல் சிறுகல் லாகச்

சிக்கலாய் வந்திறங்குச் சேட்பந்

- யூகி வைத்திய சிந்தாமணி.

Iyya Kalladaippu is characterized by excruciating pain in the umbilical region, Pain in the joints of upper and lower extremities, Low-backache, Spasmodic pain, Sweating and gradual passing out of white coloured stone granules in the urine.

தொந்த கல்லடைப்பு

வந்திறங்கும் நீர்த்தாரை யடியிற் றானும்

மாவருத்த முண்டாகி வலியு மாகி

நொந்திறங்கி நீர்தானு மருவி பாயும்

நொய்தான சிறுமணல் போல் நொறுங்கிக் கல்லான்

சந்திறங்கி நீர்வழியில் வந்து வீழும்

தாக்கான சிறங்கைக்கல் தினமொன் றுக்கு

துந்திறங்கித் தினந்தினமு மிழந்து கொல்லும்

தொந்தமாங் கல்லடைப்புச் சூட்டி டாயே.

-யூகி வைத்திய சிந்தாமணி

In Thontha Kalladaippu, Severe pain is felt just below the urethral region with excess urination. It is characterized by disintegration of stones in to small, sand like granules in the urine.

Classification According To Noi Vilakkam:

வளி முதல் மூன்றினுந் தோன்றலாலும்

கருநீர் தன்னிற் தோன்றலாலும்

கல்லடை நால் வகைப் படுமெனமொழியே"

-நோய் விளக்கம்

There are four types of Kalladaippu according to Noi vilakkam

1. Vali kalladaippu
2. Azhal kalladaippu
3. Iyya kalladaippu
4. Karuneer kalladaippu

வளி கல்லடைப்பு (Vali kalladaippu):

“படர்மிகப் படுத்தல் பற்கள் கடித்தல்

நடுங்கல் உந்தியும் குறியும் பிசைதல்

கசடுகீழ் சளியொடு கழலல் அழுதல்

சிறுநீர் துளித்தல் என்பவும் பிறவும்

வளியின் கல்லடைக் குறியென மொழிய

கறுத்துஞ் சிவந்தும் முனைகள் பரந்தும்

வளியின் கல்லது வடிவுனு மென்ப"

-நோய் விளக்கம்

- Tongue biting, palpitation and shivering
- Lower abdominal colic and pain in the external genitalia
- Dribbling of Urine, The Stones are blackish red in colour.

அழல் கல்லடைப்பு (Azhal Kalladaippu):

“சுட்டென நீரியம் மிகவெதும்பிடுதலும்

நோதலும் அவைக் கல்லடைக்குறியே

சிவந்துங் கறுத்து மஞ்சளாகியும்

சேங்குரு வடிவில் கல்லது தோன்றும்"

-நோய் விளக்கம்

- Burning micturition, Dysuria
- Passing reddish black or yellow coloured stones.

ஐய கல்லடைப்பு (Iyya Kalladaippu) “

நீரியங் குத்தல் திணித்தல் குளிர்த்தல்

எனுமிவை ஐயக் கல்லடைக் குறியே

வெளுத்தும் தேனிறமாகிய மொளிர்ந்தும்

பெரு வடிவுடைத்தாம் ஐய கல்லடைப்பு"

-நோய் விளக்கம்

- Pricking pain with severe intensity when passing urine
- Fever with rigors
- White or honey coloured shining or luminant large size stone expelled.

கருநீர் கல்லடைப்பு (Karuneer kalladaippu)

கரு நீர்க்கல்லின் வளி சினந்தெழுந்து

விரைகளி னடுவில் அதுதனைத் தடுத்தலின்

கருநீர்க் கல்லடை மருவிடு மென்ப

நீரியம் நோதல் சிறுநீர் தடைபடல்

விரை வீங்கியிருத்தல் எனுமிவை பிறவும்

கருநீர் கல்லடைக் குறியென மொழிய

கருநீர்க் கல்லினை வளியது முடுகிச்

சிறியவும் பெரியவுந் துண்டுகளாக நொறுக்கிடும்

அவை சிறுநீர் வழி வெளிப்படவாகும்

அவை சிறுநீரினைத் தடுத்தல் நிற்கும்

சாற்றிய நீரினைத் தடுத்து நிற்பின்

ஆற்றல் குறைதல் வயிறு நோதல்

சுவைகெடல் வெளிறு மறுப்பு நீர்வேட்கை

வெல்வளி யெனுமிவை விளைந்திடு மெந்ப...

- நோய் விளக்கம்

- Sudden or gradual obstruction to flow of urine
- Excessive Vali kutram breaks the stones into small and large size crystals and expels along with urine, Sudden stoppage of urine stream
- Retention of urine, Abdominal pain, Loss of taste,excessive thirst.

In Dhanvanthiri vathiyam, Klladaippu is classified into four types, they are

1.Kallerippan

2.Pitha achmari

3.Silethuma achmari

4.Sukila achmari

In Siddhar Aruvai Maruthuvam, Klladaippu is classified into four types, they are

1. Vali Kalladaippu

2. Azhal Kalladaippu

3. Iyya Kalladaippu

4. Venneer Kalladaippu

Classification In Jeevaratchamirtham And Anubhava vaithiya Devaragasiyam:

Types Of Kalladaippu:

1. Vatha Achmari

2. Pitha Achmari

3. Kabha Achmari

4. Shukila Achmari

5. Swagara Achmari

Syndrome Associated With Kalladaippu:

உக்கார சூலை

“குத்துமுக் காரசூலையின் குணந்தான்
கோர்வையாய் விலாவதனில் முதுகில் நெஞ்சில்
அத்தியினில் நாபியில பானமாங் குதத்தில்
அதிகத்துன் மாங்கிசந்தான் வளர்ந்து மேவிப்
பத்துமணற் படுக்கைப்போற் சலத்து வாரப்
பதிநெருக்கி மூத்திரமாங் கிரிச்சி யுண்டாய்த்
தத்துசடங் கடுப்பெடுத்து மதிக லங்கித்
தளர்ச்சியொடு மயக்கமாய்த் தள்ளுந்தானே”

-யூகி வைத்திய சிந்தாமணி

Excessive growth of muscles in chest region, back of trunk, umbilicus, anal and urethral orifice followed by structure of urethral orifice like a sand like crystals blocked in urethra, Dysuria, body pain, tiredness and giddiness occurs.

Mukkutra Verupadukal (Siddha Pathology)

The imbalance in one's diet and fluid intake increases the Azhalkutram. This raised kutram dries up the body fluid and urine resulting in concentration of salts, this further affects the Keezh nokku kaal. One of the functions of the Keezh nokku kaal is to excrete urine. So when this Keezh nokku kaal is affected, the urine will be obstructed within urinary tract. This favours the deposition of urinary salts to develop into calculi anywhere in the kidney or urinary tract.

Diagnostic Methodology:

The Diagnostic methodology in Siddha system is unique as it is made purely on the basis of clinical acumen of the physician. The diagnosis is arrived from,

Pulanal Arithal (examination of sense organs) and Poriyal Arithal

Vinaathal (Interrogation)

Envagai thervu (eight fold examination)

Pulanal Arithal

The physician should examine the patient's pulangal by his Porigal & Pulangal

Hearing - Ear

Vision - Eye

Taste - Tongue

Sensation - Skin

Smell - Nose

Poriyal Aridhal:

The physician should examine the patient's porigal by his porigal.

Mei - To feel all types of sensation

Vaai - For knowing taste

Kan - For vision

Mooku - For knowing the smell

Sevi - For hearing

Vinaadhal (Interrogation)

The physician should interrogate the patient's name, age, occupation, native place, Socio economic status, dietary habits, present complaints, history of present illness, aggravating factors, history of previous illness etc..

Envagai Thervugal:

"நாடி பரிசம் நாநிறம் மொழிவிழி

மலம் மூத்திரமிவை மருத்துவராயுதம்"

-தேரையர்

"அகத்துறு நோயை கரத்தாம லகம்போல்

பகுத்தறிவீர் நாடிப் பரிசம் - தொகுத்த நிறம்

கட்டுவகைச் சொல்மொழி கண்ட மல மூத்திரம் நா

எட்டுவகை யாலு மறிவீர்"

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா 4000

"மெய்குறி நிறந்தொனி விழிநாவிருமலம் கைக்குறி"

-தேரையர்

According to Agathiyar Vaithiya Sinthaamani Venba – 4000, and saint therayar the Envagaithervu(Eight types of diagnostic tools) Includes Naadi (Pulse), Naa (Tongue), Niram (Colour), Mozhi (Voice), Vizhi (Eyes),Malam (Faeces), Neer (Urine) and Sparisam (Touch & palpation).

Naadi: (Pulse)

The 'Pulse Diagnosis' is a unique method in Siddha Medicine. The pulse should be examined in the Right hand for male and the left hand for female. The pulse can be recorded

at the radial artery. By keenly observing the pulsation, the diagnosis of diseases well as its prognosis can be assessed clearly.

"கேளப்பா புருடருக்கு வலது கையைக்
கிருபையுடன் தான்பிடித்து நெட்டை வாங்கி,
சூளப்பா பெருவிரலோ ரங்குலத்துக் கப்பாற்
சுகமாக மூவிரலா லழுத்திப் பார்க்க"

- பரிபூரண நாடி

"பார்க்கவே பெண்டுகளுக் கிடது பக்கம்"

-பரிபூரண நாடி

Naadi is nothing but the manifestation of the vital energy that sustains the life within our body. Naadi plays an most important role in Envagai thervu and it has been considered as foremost thing in assessing the prognosis and diagnosis of various diseases. Any variation that occurs in the three humors is reflected in the Naadi. These three humors organize, regularize and integrate basic functions of the human body. So, Naadi serves as a good indicator of all ailments. Aggravation of Valinaadi and Azhal naadi produces symptoms of Kalladaippu. This is emphasized in Agathiyar naadi, Sathaga naadi and Rathina churukka naadi.

“அறைந்தோம் வாதரோகியுடல்
அடிகண் முகமும் பலமலமும்
நிறைந்த விழியில் நீர்வடியும்
நீண்ட நாவு கறுத்திடவும்
நிறைந்த முள்ளாய் தானிருக்குஞ்
சிறுநீர் பொருமி கருத்து வரும்
உறைந்த நீருங்கரு கருத்து
முறையாய் ரோகமு முண்டாய்"

-அகத்தியர் நாடி

வாத மெனும் நாடியது தோன்றில்

சீதமந்தமொடு வயிறுபொருமல் திரட்சிவாயு

சீதமுருங் கிராணி மகோதரம் நீராமை

திரள்வாயு சூலை வலிக்கடுப்புத்தீரை

நீதமுருங் கிருமிகுன்மம் அண்டவாதம்

நிலையுங்நீர்க் கிரிச்சரங்கள் தந்து மேகம்"

-சதக நாடி

“ஏவலாய் குழலாய் பித்தசெய்குணம் விளம்பக்கேளாய்

கோல்வேல் விழிசிவந்து குளிர்ந்திருக்கு மல்லால்

சீலவே நீர்கருத்து நொந்து சுருக்கென வந்துவீழும்

ஞாலமே கிறுகிறென்று நாவுலர்ந்திருக்குந்தானே"

-இரத்தினச் சுருக்க நாடி

As per Sathaga naadi Derangement of Valiazhal naadi also produces symptoms of Kalladaippu.

பொருளான வாதத்தில் பித்தஞ் சேர்ந்து

பொருந்து குணங்களா முஷ்ணவாயு சத்தி

செரியாமை புளித்தேப்பம் பொருமல் நீரிற்

சிவப்புமலம் பிடித்தலுருந் தாது நட்டம்"

-சதக நாடி

Sparisam (Touch):

By Sparisam, the temperature of the skin (Thatpam-cold or veppam-hot) , smoothness, roughness, sweating, dryness ,hard patches ,swelling, abnormal growth of organs

and tenderness can be felt. In Kalladaippu patient feels tenderness over the lower abdomen, renal angle and lumbar region, swelling can be felt in case of Hydronephrosis.

Naa (Tongue):

By the examination of the tongue,its colour ,size, coating, moisture, movement, ulcer, fissure, crust can be examined. In Kalladaippu, if there is constipation, the coated tongue would be the feature. Loss of taste occurs in Karuneer kalladaippu.

“கருநீர்கல்லின் வளி சினந்தெழுந்து

சுவைகெடல் வெளிறு மறுப்பு நீர்வேட்கை"

-நோய் விளக்கம்

Niram (Colour):

Colour of the skin, conjunctiva, tongue, nail bed and hair etc..

Vali udal- Dark Complexion

Azhal udal -Wheatish yellow Complexion

Iyya udal -Fair Complexion

Mozhi (Speech):

By examining mozhi (speech), the various characters are to be noted such as hoarseness, slurring etc.. and various disorders of speech such as dysarthria can also be noted in Kalladaippu. There is low pitched voice due to agonizing pain in the lower abdomen and burning sensation in urethra.

Vizhi (Eye):

Examine the colour of eye like reddish or yellowish discolouration and characters like dryness and Lacrimation. Tiredness and redness is observed in patients with Renal colic.

Malam (Stool):

By examining malam, its nature (consistency), colour, quantity and presence of blood can be noted.

Neerkuri (Urine Examination):

Urine examination is one of the good diagnostic tool when compared to other Envagai thervugal.

நீர்குறிச் சிறப்பு :

“தர்க்கசாத் திரிக ளானோர்
தங்களிற் றேர்ந்து நாடி
வர்க்கமாம் நாடி தன்னில்
வருவது மயக்க மென்றே
உற்றநீர்ப் பரீஷை யாய்ந்தே
யுரைத்தன ரிதற்கு நேராய்
மற்றொரு விதிநூ லில்லை
மருத்துவக் கலைவல்லோர்க்கே"

-அங்காதி பாதம்.

In order to shed off the ambiguity in the diagnosis of disease through pulse perception. The exponents have charted out a method called Neerkuri - an incomparable method of diagnosis.

“அருந்துமா ரதமும் அவிரோ தமதாய்
அஃகல் அலர்தல் அகாலவூண் தவிர்ந்தழற்
குற்றள வருந்தி உறங்கி வைகறை
ஆடிக் கலசத் தாவியே காதுபெய்
தொருமுகூர்த் தக்கலைக் குட்பட்டு நீரின்
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே”

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

On the day before the urine test one should have food of all the six tastes in anharmonious blend at regular time interval based on one's digestive fire (Appetite) After a sound overnight sleep, Urine should be collected in a crystal bowl and the test should be done 90 minutes before dawn.

Characters of urine:

"வந்த நீர்க்கரி எடை மணம் நுரை எஞ்சலென்

றைந்திலுளவவை யறைகுது முறையே"

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

1. Niram (Colour)

2. Edai (Specific gravity)

3. Nurai (Froth)

4. Naatram (Smell)

5. Enjal (Deposits)

Urine sample should be examined for the above mentioned five parameters.

Niram (Colour):

Nira Thogai:

"பீதம் செம்மைபைங் கருமை வெண்மையென்

றோதைங் கொழுமையை யொத்துகு நீரே"

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

1. Yellow
2. Red
3. Green
4. Black
5. White

Urine may be of any colour mentioned above according to the disease condition.

கல்லடைப்பு நீரின் குணம் (Colour Indicating Urinary Stones):

The colour of the urine look like decomposed flesh cleaned water indicates the presence of Kidney stone.

“தீப்புலால் கழுநீர்ச் செயலெனிர் குண்டிக்
காய்த்துர்ப் பலத்தால் கதித்த நீராமத்
துர்ப்பலக் கபமும் சோரியும் கொதிப்புறப்
பற்பகலாகப் பையப் பதிந்ததே”

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

"காணிதில் சீழுங் கலந்திழி மணமுறின்
கருப்ப நாபிகளு ளுங் காம நாளத்துளும்
விரணமுன் டின்றேல் எய்துகல் மறியல
திருத்தலே திண்ண மெனமனத் துன்னெ"

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

Edai (Specific Gravity):

Urine which is not thick is considered to be healthy one.

“மிகத் தடிப்பும் மிகத் தேறலும் இன்றெனில்
சுகத்தைத் தரும் மெய்ச் சுபாவ நீர் நன்றெ”

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

Nurai (Froth):

“பந்தமெய்ப் பசையிளகப்படும் பருவத்
தந்தார் பூதமாய் அனில மூத்திரத்தில்
சம்பந்தப்படும் ததிநுரைப் புனலே”

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

Urine may be frothy in nature. Reduced froth in the urine indicates derangement of Vali, Azhal and Iyyam.

Naatram (Odour):

“ஓதமணத்தோ டவதோ மொத்தி றங்கும்
சீதளங் கம்மிய தேகிகளுக்கே

"வெய்ய துர்க்கந்தம் வீசுநீர் முத்திரப்
பைநாளமிற்றைப் பற்று புண்குறியே
அம்மொழியின்றெனினனிலமே முதலிய
மும்மலச் சுதமே மூலமென் றுணரே"

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

Enjal (Deposits):

If the colour of the urine excreted looks like curd water or milk and the presence of white colour and sand like deposits in urine indicates stones in the Kidney. It is mentioned in the following poem,

“நார்த்ததி நீர்பால் போல
நவையுற்ற கிழியு மானால்
மாரற்ப முற்றா நீரி
லடி மண்டிக் கிடந்த தானால்
பாரித்த மெழுகு மாங்காய்
பற்றிய கல்லி நாலே
சீருற்ற செய்கை யென்று
தெரிவுறச் செப்ப லாமே”

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

Neikkuri:

The urine was kept in the Kidney tray and exposed to sunlight under non wind condition.The urine should be examined after dropping a drop of Gingelly oil gently in it with a glass rod. If the oil spreads like snake, it indicates Valineer, like a ring indicates Azhal neer, and float like a pearl indicates Iyya neer and if it sinks in urine, it indicates Mukkutram.

"நிறக்குறிக் குரைத்த நிருமாண நீரிற்

சிறக்க வெண்ணெய்யோர் சிறுதுளி நடுவிடுத்

தென்றுறத் திறந்தொலி ஏகாதமைத்ததி

னின்றதிவலை போம் நெறிவிழியறிவும்

சென்றது புகலுஞ் செய்தியை யுணரே".

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

"அரவென நீண்டினஃதே வாதம்"

"ஆழி போற் பரவின் அஃதே பித்தம்"

"முத்தொத்து நிற்கின் மொழிவதென் கபமே"

-தேரையர் நீர்க்குறி நெய்க்குறி வைத்தியம்

In Kalladaippu patients, either oil spreads like a ring (Azhal neer) or like a snake (Vali Neer).

சாத்திய அசாத்தியம்: (Prognosis)

சூட்டிய சாத்தியத்தைச் சொல்லக் கேளாய்

சுளுக்காகும் வாதத்தின் கல்ல டைப்பு

பூட்டிட்ட பித்தத்தின் கல்ல டைப்புப்

புகழான சேட்டுமத்தின் கல்ல டைப்பு

மூட்டிட்ட இதுமூன்று மசாத்ய மாகி

முனையான மருந்துகளிற் செம்மை யாகும்

தோட்டிட்ட தொந்தமாங் கல்ல டைப்புத்

தொடுசுறவே கொல்லுமிது சூட்சந் தானே

-யூகி வைத்திய சிந்தாமணி

According to Yugi Mamunivar,Vali, Azhal and Iyya Kalladaippu are curable whereas Thontha Kalladaippu is incurable.

மருத்துவம் (Line Of Treatment) :

“வைத்தியச் செயல் வைத்தியமே”

- திருமூலர் 800

The main object of treatment is to bring down the deranged mukkutrams to natural equilibrium by giving purgatives, which cure derangement of Vatham, this is one of the cause for kalladaippu.

“பேதியால் வாதம் தாழும்”

“வாந்தியால் பித்தம் தாழும்”

“அஞ்சனத்தால் கபம் தாழும்”

-வியாச பகவான் சரீர சூத்திரம்

As per the above mentioned poem, the author gave Agasthiyar Kuzhambu 130 mg with sangankuppi leaves juice as purgative drug to all patients as per their body condition.

In Siddha system, treatment is not only for treating the disease but also for preventing and improving the body condition .This has been mentioned as Kaapu, Neekam and Niraivu.

Diet :

"மருந்தே உணவு, உணவே மருந்து"

- திருமூலர்.

"மாறுபா டில்லா உண்டி மறுத்துண்ணின்

ஊறுபா டில்லையு யிர்க்கு"

- திருக்குறள்.

Do's

- Drink 3 to 4 litres of Water, a day.
- Take more amount of Barley rice porridge, Tender coconut, Stalk of the greens, Spadix of the Plaintain, Nerunjil kudineer, Koolu kudineer
- Fruits: Water melon, Cucumber, Pineapple, lemon, Guava
- Cereals:Dal, Black gram, Green gram, Dried pea
- Vegetables: Radish, Broad beans, Lady's finger, Bottle guard, White pumpkin.
- Seeds: Cumin seed, Cucumber seed

Dont's

- Tomato, Cabbage, Cauliflower, Coffee, Tea, Chocolate, Meat, Greens, Egg, Grapes, Strawberry, Caustic soda, Tamarind, Betle, Areca nut, Tobacco, Liquor
- Preserved beverages, Foods rich in salts, Salty water, Milk and milk products, Spicy and fried foods

MODERN ASPECT

MODERN ASPECT

RENAL CALCULUS

ANATOMY OF THE KIDNEY:

Kidney is one of the major excretory organ of the body.The kidneys are two bean shaped organs situated on the posterior abdominal wall, on either side of the lumbar vertebral column. Each kidney weighs about 120 to 150gms and is enclosed in thin but tough fibrous capsules, and concave medial side of kidney is the hilum where the renal artery enters and renal vein and ureter leave the kidney.The components of kidney are arranged in three layers.

1. Outer cortex

This is dark and granular appearance. It contains renal capsules and convoluted tubules,at intervals cortical tissues penetrate medulla in this form of columns is called column of Bertini.

2. Inner medulla

This gives radially striated appearance as it contains tubular and vascular structures. Medulla mass is divided into 8 to 18 medullary or malphigian pyramids, the base of pyramids are connected with cortex and apex projects into major calyx.

3. Renal sinus

It consists of upper expanded part of ureter called renal pelvis. It is subdivided into 2 or 3 major calyces and 8 minor calyces. It also consists of branches of nerves and arteries and the tributaries of veins.

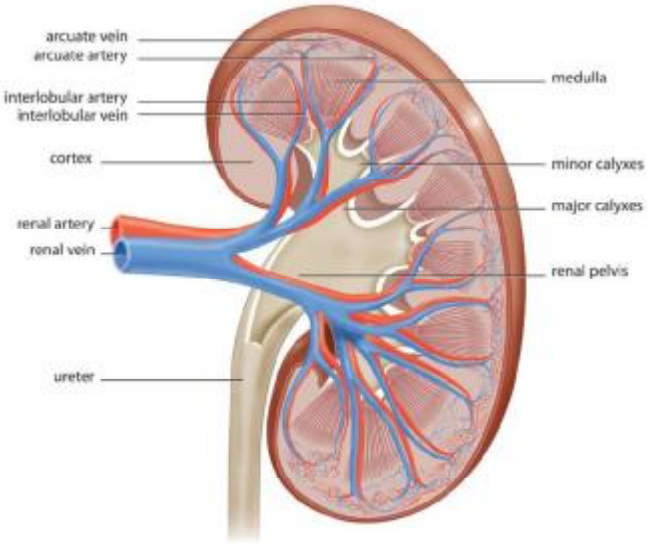
Nephron

Structural and functional unit of the kidney is Nephron. Each kidney has millions of nephrons. Each Nephron begins in cortex as funal like dilatation called the Bowman's capsule, which encloses a tuft of capillaries, the glomerulus. The Bowman's capsule together with glomerulus is called the malphigian corpuscule or renal corpuscle.

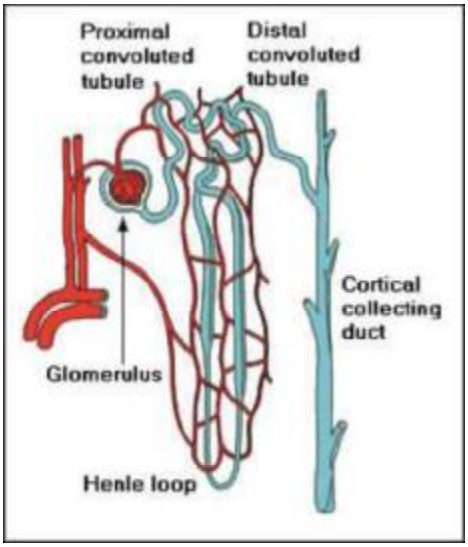
The renal tubule leaves the Bowman's capsules and becomes convoluted to form the proximal convoluted tubule (PCT). It then becomes straight and passes down the medulla as

the descending limb of the loop of Henle, after varying distances before reaching the end of papilla, it turns round in the form of U-shaped bend, forming loop of Henle, and passes upwards towards the cortex, parallel with its former course as the ascending limb of the loop of Henle. Each limb has an outer thick and inner thin portion.

CROSS SECTION OF KIDNEY



STRUCTURE OF NEPHRON



RENAL CIRCULATION:

Renal artery arises from the aorta, enters the kidney at the hilum and divided into an anterior and aposterior branch, which gives rise to about five segmental arteries. The segmental artery divided into interlobar arteries,which pass outward in the medulla between the pyramids to reach boundary zone between the medulla and cortex.Here they turn to take a horizontal course uniting with adjacent arteries to form arterial arches called arcuate arteries.Several straight arteries arises from these arches and run radially outward through the cortex.These are called interlobular arteries.From each interlobular arter, numerous afferent arteries arise,and enter the Bowman's capsule forming glomerular capillary tuft.The afferent arterioles divide into 4 to 5 large capillaries,which from the loop,and capillary loop unite to form the efferent arteriole,which leaves the Bowman's capsule.

The efferent arterioles give rise to renal portal system. The efferent arterioles form a second capillary network surrounding the tubular portion of the nephron, the capillaries of second set are called peritubular capillaries.

Some specialized peritubular capillaries called Vasa recta supply the tubular portion of juxramedullary nephron. Vasa recta arise directly from the efferent arteriole of the juxtamedullary nephron. Vasa recta supply the tubular portion of juxtamedullary nephrons. The peritubular capillaries drain into the venous system, which include the peritubular venules, interlobular veins, segmental vein and final the renal vein.

URINE FORMATION:

Kidney excretes the unwanted substances including metabolic end products and those substances, which are present in excessive quantities in the body, through urine.Normally, about 1-1.5 litres of urine is formed every day.

The mechanism of urine formation includes various processes. First, when blood passes through glomerular capillaries, the plasma is filtered into the Bowman's capsule. When this filtrate passes through the tubular portion of the nephron, it undergoes various changes both in quality and in quantity.

Many wanted substances like glucose, amino acids, water and electrolytes are reabsorbed from the tubules. This process is called tubular reabsorption and some unwanted

substances are secreted into the tubule from peritubular blood vessels. This process is called tubular secretion or excretion.

The urine formation includes the following three processes:

1. Glomerular filteration
2. Tubular reabsorption
3. Tubular secretion

1. GLOMERULAR FILTERATION

When blood passes through the glomerular capillaries the plasma filtered into the Bowman's capsule. All the substances of plasma are filtered except plasma proteins. The filtered fluid is called glomerular filtrate. During filteration the substances passes through the three layer of filtrating memberane such as,

1. The endothelium of capillary memberane
2. Basement memberane and
3. Endothelium of visceral layer of Bowmen's capsule.

The glomerular filtration is called ultra filtration because minute particles are filtered, but the plasma proteins are not filtered due to larger molecular size than size of the slit pores. The composition of glomerular filtrate is similar to that of plasma except in the absence of plasma proteins.

Glomerular filtrate rate (GFR)

The total quantity of filtrate formed in all the nephron of both the kidneys in the given unit of time is called glomerular filtrate rate. The normal value of glomerular filtrate is 125ml/ minute or about 180 litre /day.

2.TUBULAR REABSORPTION

When the glomerular filtrate passes through the tubular portion of nephron, both quantitative and qualitative changes occur. The tubular epithelial cells reabsorb large quantity of water, electrolytes and other substances. The substances, which are reabsorbed, pass into the interstitial fluid of renal medulla, and from here, the substances more into the blood in

peritubular capillaries. As the substances are taken back into the blood, the entire process is called tubular reabsorption.

Selective reabsorption

The tubular cells of kidney selectively reabsorb the substances present in the glomerular filtrate, according to the needs of the body. So, the tubular reabsorption is called the selective absorption.

Mechanism of reabsorption

The mechanisms involved in tubular reabsorption are of two types

1. Active reabsorption
2. Passive reabsorption

1. Active reabsorption

The movement of molecules is against the electrochemical gradient. This needs liberation of energy and the energy is derived from ATP. The substances reabsorbed actively from the renal tubule are sodium, calcium and potassium, phosphates, sulphates, bicarbonates, glucose, amino acids, ascorbic acid, uric acid and ketone bodies.

2. Passive reabsorption

In this process, the movement of molecules is more along the electrochemical gradients. This process does not need energy, the substances reabsorbed by passive transport are chloride, urea and water.

3. TUBULAR SECRETION:

Some substances secrete into the lumen from the peritubular capillaries through the tubular epithelial cells. These known as tubular secretion or tubular excrertion.

1. Potassium is secreted actively by sodium – potassium pump in distal convoluted tubule and collecting duct.
2. Ammonia is secreted in the proximal convoluted tubule.
3. Hydrogen ions are secreted in the proximal and distal convoluted tubles, Maximum hydrogen ion is secreted in proximal tubule.

Thus by the process of glomerular filtration, selective reabsorption and tubular secretion urine is formed in the nephron. It is also concentrated by counter current mechanism and anti diuretic hormone. Finally, it passes through the ureter into the urinary bladder and is stored there until it is voided out.

RENAL CALCULUS:

DEFINITION:

A kidney stone, also known as a renal calculus.In Latin (ren- "kidney" and calculus- "pebble"). It is a solid concretion or crystal aggregation formed in the kidneys from dietary minerals in the urine. Kidney stones form when there is a decreased in urine volume and/or an excess of stone-forming substances in the urine. Until the 1980s, urinary stones were a major problem, with a significant proportion of patients requiring extensive surgical procedures and a sizable losing their kidney. The advent of extra corporeal techniques for stone destruction and refinements in endoscopic surgery, however have greatly decreased the morbidity associated with stone surgery.

LOCATION:

- Urolithiasis refers to stones originating anywhere in the urinary system, including the kidneys and bladder.
- Nephrolithiasis refers to the presence of such calculi in the kidneys.
- Calyceal calculi refers to aggregations in either the minor or major calyx, parts of the kidney that pass urine into the ureter.
- Ureterolithiasis refers to calculus or calculi are located in the ureter. Stones may also or pass into the bladder, a condition referred to as Cystolithiasis.

EPIDEMOLOGY

INTRINSIC FACTORS

Hereditary

Several disorders that cause renal stones are hereditary. Familial renal tubular acidosis are associated with nephrolithiosis in almost 70 % of patients. Cystinuria, Xanthinuria and Dehydroxydenuria are disorders cause renal stone.

Age and Sex

The peak incidence of urinary calculus occurs in the twenties to fourties. About three males are affected for every female because increased serum testosterone causes increased endogenous oxalate production in male, increased urinary citrate in women.

EXTRINSIC FACTORS

Geography:

The prevalence of urinary calculi is higher in those who live in mountainous, desert, and tropical areas.

Climate and seasonal factors:

Price and associates found that the incidence of urinary calculi was higher during the summer months. High temperatures increase perspiration, which may result in concentrated urine. This promotes increased urinary crystallization. Parry and lister suggest that increased exposure of sunlight cause increased production of 1, 25- dichydroxyvitamin D3 and increased urinary calcium excretion. This may cause higher incidence of urolithiosis in summer months.

Water Intake:

Urine dilution by increased water intake may increased ion activity coefficients and hence urinary crystallization, water diuresis reduces the average time of residence of free crystal particles in urine dilutes compononents of urine that may crystals. Minerals contents of water may contribute to cause stone disease, (E.g Sodium Chlorides) zinc in an inhibitor of calcium crystallization.

Dehydration:

Not drinking enough water each day can increase your risk of kidney stones. People who live in warm climates and those who sweat a lot may be at higher risk than others.

Diet:

Eating a diet that's high in protein, sodium and sugar may increase the risk of some type of kidney stones. This is especially true with a high sodium diet.Too much sodium in diet

increases the amount of calcium in kidneys must filter and significantly increases risk of kidney stones.

Animal Protein:

Western nations typically contain large propotion of animal protein,consumption of animal protein creates an acid load that increases excretion of calcium and uric acid and reduced citrate.Urinary excretion of excess sulfurous amino acids (cysteine and methionine) and uric acid and other acidic metabolites from animal protein acidifies the urine,which promote the formation of kidney stones.Low urinary citrate excretion is also commonly found in those with a high dietary intake of animal protein.Where as vegetarians tend to have higher levels of citrate excretion.Low urinary citrate to promotes stone formation.

Vitamins:

The evidence linking vitamin C supplements with an increased rate of kidney stones is inconclusive. The excess dietary intake of vitamin might increase the risk of calcium oxalte stone formation. The link between vitamin D intake and kidney stone also tenuous. Excessive vitamin D supplementation may increase the risk of stone formation by increasing the intestinal absorption of calcium.

Electrolytes:

Calcium is not the only electrolyte that influence the formation of kidney stones .For example, by increasing urinary calcium excretion, high dietary sodium may increase the risk of stone formation.Drinking fluoridated tap water may increase the risk of kidney stones by similar mechanism.

ETIOLOGY:

Predisposing factors for kidney stones

Environmental and dietary

- Low urine volumes: High ambient temperatures, low fluid intake

Diet:

- High protein intake, high sodium, low calcium
- High sodium excretion

- High oxalate excretion
- High urate excretion
- High citrate excretion

Acquired causes

Hypercalcaemia of any cause

Renal tubular acidosis type 1

Congenital and inherited causes

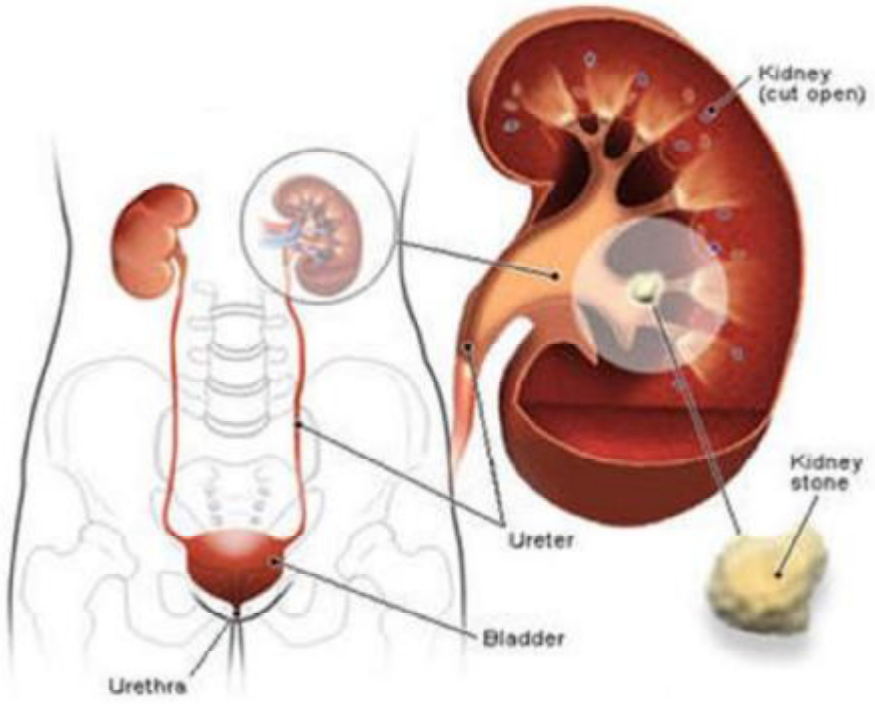
Familial hypercalciuria

Primary hyperoxaluria

Cystinuria

Medullary sponge kidney

SITE OF CALCULUS:



CLINICAL SYMPTOMS:

- Kidney stones typically leave the body by passage in the urine stream, and many stones are formed and passed without causing symptoms.If stones grow to sufficient size (usually at least 3 millimeters (0.12 in)) they can cause obstruction of the ureter.
- Ureteral obstruction causes postrenal azotemia and hydronephrosis (distension and dilation of the renal pelvis and calyces), as well as spasm of the ureter.
- This leads to pain, most commonly felt in the flank (the area between the ribs and hip) lower abdomen and groin (a condition called renal colic). Renal colic can be associated with
- Nausea,
- Vomiting,
- Fever,
- Blood in the urine,
- Pus in the urine,
- Painful urination.

Renal colic typically comes in waves lasting 20 – 60 minutes, beginning in the flank or lower back and often radiating to the groin or genitals.

ABDOMINAL PAIN IN CALCIUM STONE:

- The most common symptom of calcium-based kidney stones is a sharp, stinging or cramp-like pain in the abdomen, back or side. This pain may occur in waves as a kidney stone passes through the urinary tract.
- Calcium kidney stones take on a variety of shapes and sizes and pain may vary with these parameters. Some calcium-containing stones may be large enough to block the urinary tract altogether, preventing the flow of urine and causing further pain and discomfort.

ABDOMINAL PAIN IN STRUVITE STONES:

- Struvite stones are typically associated with a burning-like abdominal pain, similar to pain of a kidney or urinary tract infection. The pain associated with a struvite stone may not be stinging and cramping like the pain associated with calcium stones.

- Struvite stone pain tends to be less localized, dull, burning and aching and less likely to come in waves of pain.

BLOOD IN URINE:

- As larger calcium-based kidney stones pass through the urinary tract, they can scrape and damage the inner lining of the urinary tract and cause bleeding.
- Struvite stones and an accompanying infection may damage the inner lining of the urinary tract and lead to the appearance of blood in the urine.

FEVER, CHILLS AND NAUSEA:

- Struvite stones are formed from magnesium and ammonia through the action of bacteria during a kidney infection or UTI.
- Struvite stone symptoms include
- fever,
- chills,
- loss of appetite
- nausea.

Physical signs

Pulse rate and blood pressure may be elevated because of pain and agitation. Examination of the abdomen reveals moderate deep tenderness on palpation over the location of the calculus and the area of the loin.

TYPES OF CALCULUS

Kidney stones are tpically classified by the location and the chemical composition

CALCIUM OXALATE STONES:

This is most common type of stones, 39% of patients are calcium oxalate type stone. 14% of patients are combined with calcium phosphate.They are irregular in shape and covered with sharp projection, which tends to cause bleeding. The surface of the stone is discoloured by pigments of altered blood.It is very hard and absorbs X- rays well.

PATHOPHYSIOLOGY OF STONE FORMATION

1. HYPERCALCIURIA

Between 30% and 60% of all patients with calcium Oxalate kidney stones have increased urinary calcium excretion in the absence of raised serum calcium levels. Hypercalciuria has been defined as the excretion of greater than 4mg calcium per kg body weight per day or greater than 7 mmol in men and 6 mmol in women (Parks and coe.1986) Final definition is the excretion of urinary calcium of greater than 0.11 mg/ 100ml of glomerular filtrate.

Hypercalciuric nephrolithiasis suffer from multiple disturbances in renal tubular function a disturbance in phosphates transport and accelerated 1, 25- dihydroxyvitamin D3 synthesis, resulting in increased intestinal calcium absorption.

Hypercalciuria has three types, such as

1. Absorptive hypercalciuria
2. Renal hypercalciuria
3. Resorptive hypercalciuria

1. Absorptive Hypercalciuria

In absorptive hypercalciuria, the primary abnormality is increased calcium absorption. In absorptive hypercalciuria type 1.Intestinal Hyper absorption of calcium exists, whether or not the patient is on a calcium restricted diet. Intestinal magnesium absorption is normal in patients with absorptive hypercalciuria, but not oxalate, absorption in both the jejunum and ileum. Absorptive hypercalciuria type 2 is a variant of this disorder wherein patient's exibit increased urinary calcium excretion on a low calcium, low sodium diet. In the final subcategory, absorptive hypercalciuria type 3, the serum phosphate is low, suggesting that the increased intestinal calcium absorption is the result of stimulation in vitamin D production as the result of the lowered serum phosphate.

2. Renal hypercalciuria

In this condition the underlying abnormally is a primary renal wasting of calcium. The consequent reduction in circulating serum calcium stimulates PTH production. Two facts

must be stressed: first, intestinal absorption of calcium is increased in both absorptive and renal hypercalciuria but stimulated in renal hypercalciuria. These two criteria elevated fasting urinary calcium levels and stimulated parathyroid function serve to distinguish renal from absorptive hypercalciuria.

3. Resorptive Hypercalciuria

This syndrome is synonymous with subtle hyperparathydroism. Hypercalciuria results from excessive PTH dependent bone resorption well as enhanced intestinal absorption of calcium.

4. Idiopathic Hypercalciruria

The syndrome of renal phosphate leak elevated 1, 25 dihydroxyvitamin D3 and absorptive hypercalciuria has been demonstrated in members of a Bedouin tribe in which intermarriage is common, idiopathic hypercalciuria may be inherited as an autosomal trait, although the pattern can reflect polygenic control of calcium excretion as well.

II. HYPERCALCAEMIA NEPHROLITHIOSIS CAUSES

1. Primary hyperparathydroidism

These patients are between 39% and 78% with early presented of renal calculi. These patients with higher level of 1, 25- dihydroxyvitamin D3 and greater calcium absorption tend to have renal stones.

2. Malignancy associated hypercalcemia

Malignancy – associated hyper calciuria is an exceedingly rare cause of renal stones. The most common cause of malignancy- associated Hypercalcaemia, even in patients with skeletal metastasis, is production by the tumour of a bone resorpting substance called PTH-related polypeptide.

3. Sarcoidosis and other granulomatous diseases

The sarcoid granuloma produces 1, 25- dihydroxy vitamin D3, it causing increased calcium absorption, hypercalcaemia and hypercalciuria.

4. Hyperthyroidism

About 5% to 10% of patients with hyperthyroidism develop hypercalcaemia. Hypercalcaemia and hypercalciuria result from a stimulation of bone resorption mediated by thyroxine and tri- iodothyronine.

5. Glucocorticoid – induced hypercalcemia

Glucocorticoid excess leads to increased bone resorption, decreased bone formation, and osteopenia, Glucocorticoid also has direct stimulatory effect on parathyroid gland.

6. Pheochromocytoma

Hypercalcaemia when seen in patients with pheochromocytoma, occur most often in patient with multiple endocrine neoplasma type 2, in which primary hyperparathyroidism, medulary carcinoma of thyroid, adrenal gland tumour coexist.

7. Immobilization

Prolonged bed rest can lead to hypercalcaemia, as the result of increased bone turnover. Hyper calcaemia is seen most often when another condition, such as paget's disease – with accelerated bone turnover primary hyperthyroidism, or malignancy, coexist in an immobilized patient.

III. HYPEROXALURIA

CAUSES:

Primary hyperoxaluria is a rare genetic disorder resulting from increased hepatic production of oxalate. Enteric hyperoxaluria occurs in patients with short bowel syndrome or malabsorption. Finally, a group of patients with recurrent idiopathic calcium oxalate lithiasis exhibits mild hyperoxaluria or increased transport of oxalated by red blood cells.

1. Primary hyperoxaluria

Two types of primary hyperoxuluria exist. Primary hyperoxaluria type1 is an autosomal ressive inborn error of metabolism characterized by nephrocalcinosis and oxalosis. The diseases are characterized by increased urinary excretion of oxalic, glycolic and glycolic acids.Primary hyperoxaluria type 1 is due to a defect of the enzyme alanine- glyoxylate aminotransferase (AGT) in the liver.

In normal human liver, AGT catalyzes the transamination or detoxification of glyoxylate to glycine, a function that it can perform only if it is located in peroxisome. Its deficiency in primary hyperoxaluria results in glyoxylate's being oxidized to oxalate.

Primary hyperoxaluria type II or L-glyceric aciduria is a much rarer variant of the disease. Deficiencies of the hepatic enzymes D- Glycerate dehydrogenase and gyloxylate reductase lead to increase in urinary oxalate and glycerate excretion.

2. Enteric hyperoxaluria

Ingested oxalate is absorbed through the stomach and the colon. Malabsorption from any cause, including small bowel resection, intrinsic disease, or jejunoileal bypass, increases the colonic permeability of oxalate as the result of exposure of the colonic epithelium to bile salts. Furthermore, loss of calcium in the feces results in the presence of less calcium in the intestinal lumen, allowing oxalate to exist in a soluble form. The hyperoxaluria from small bowel malabsorption often exceeds 1 mmol/day and causes recurrent nephrolithiasism, nephrocalcinasis, and renal oxalate deposition.

3. Mild metabolic hyperoxaluria

Mild hyperocaluria is as least as important a factor in the pathogenesis of idiopathic calcium oxalate stones as hypercalciuria. Baggio and colleagues are found an increase in oxalate self exchange across red blood cell memberane in 79% of patients with idiopathic calcium oxalate stones. The oxalate absorption was increased with increased calcium absorption. Dietary restriction of oxalate results in decreased oxalate excretion.

IV. HYPERURICOSURIA

Uric acid promotes calcium oxalate crystallization by facilitating the formation nuclei. Sodium acid urate may produce calcium oxalate stone disease by nullifying the effectiveness of naturally occurring inhibitors of calcium oxalate crystal growth. Excessive dietary intake of purine is main cause of hyperuricosuria. Between 80% and 90% of patients with hyperuricosuria nephrolithiosis are men. Patients with mixed with uric acid and oxalate stones have lower urinary pH than patients with pure calcium oxalate stones.

V. HYPOCITRATURIA

Hypocitraturia has been reported in 15% to 63% of patients with stones. Urinary citrate is normally greater in women than in men. Hypocitraturia define as citrate excretion of less than 0.60 mmol (115 mg) in men and 1.03 mmol (200 mg) in women. Acidosis is probably the most important etiologic factors in hypocitraturia. In patients with inflammatory bowel disease and chronic diarrhea, intestinal alkali loss results in metalbolic acidosis. Thiazide-induced hypokalaemia and intracellular acidosis are the other cause of decreased urinary citrate excretion. A diet rich in animal protein may produce an acid load. Strenuous physical exercise and sodium intake can likewise produce hypocitraturia. Urinary tract infection with bacteria degrading citrate lowers urinary citrate excretion.

The primary mechanism of action of citrate is as a complexing agent for calcium. Calcium citrate complexes are considerably more soluble than calcium oxalate. Citrate inhibits the spontaneous nucleation of calcium oxalate, crystal growth and aggregation of calcium oxalate and phosphate.

VI. HYPOMAGNESURIA

Many experimental studies have suggested that administration of magnesium salts prevents stones disease. The most common cause of hypomagnesuria is inflammatory bowel disease associated with malabsorption. Most patients with hypomagnesuria also have hypocitraturia.

VII. SEX HORMONES AND RENAL STONES

Calcium oxalate renal stones occur much more frequently in men than in women because increased endogenous oxalates production by liver and increased intestinal absorption of calcium in men, increased urinary citrate concentration in urine in women.

CALCIUM PHOSPHATE STONES

Calcium phosphate stones composed predominantly around 10% of stones of renal origin. Although some amount of calcium phosphate is often found in calcium oxalate calculi, pure calcium phosphate stone are rare. It is usually smooth and dirty white, and easy to see on radiopaqhic film.

Causes:

Renal tubular acidosis is common cause for this type of stone. Upto 70% of adults with renal tubular acidosis have kidney stones. This stone may seen with oxalate and struvite stones. Stone formation typically occurs in papillary tips and in medulla. Stone formation is result of hypercalciuria, Hypocitraturia and increased urinary pH. Hypercalciuria is result of systemic acidosis on bone demineralisation and secondary hyperthyroidism. Hypocitraturia result from a primary defect in renal tubular citrate transport, again, the result of metabolic acidosis. Hypocitraturia is probably the most important metabolic factor for stone formation in patient with renal tubular acidosis. The defect in proximal tubular bicarbonate resorption is associate with this type of stone.

Diagnosis: the patient has hypokalaemia, Hyper chloremia, Metabolic acidosis and urinary pH of 5.5.

URIC ACID STONE

About 5–10% of all stones are formed from uric acid. People with certain metabolic abnormalities, including obesity may produce uric acid stones.These are hard, smooth and often multiple. Their colour varies from yellow to reddish brown. The pure uric acid stone are radiolusent most of stone with calcium so they radiolucent shadow.

Causes:

The principal cause of uric acid crystallization is supersaturation of urine with respect to undissociate uric acid. The normal 24- hour urinary uric acid excretion is between 500 and 600 mg per litre of urine. Patient with uric acid stone often have prolonged periods of acidity in urine.

The pH of urine in patient with uric acid stones was 5.5±0.4 as compared with 6.0±0.4 in patients who form calcium oxalate stones. Three factors are involved in uric acid urolithiosis. First, patients tend to excrete excessively acid urine at relatively fixed, low urinary pH. Second, they may absorb produce or excrete more uric acid than patients without gout or uric acid stones.

Third, urinary volume is diminished in these patients. The combination of these factors is ideal for the crystallization of uric acid in the urine. The frequency of uric acid stones in

gout is about 20%. Myeloproliferative disorders such as acute leukemia are an important cause of severe hyperuricosuria particularly in childhood.

STRUVITE STONES (INFECTION STONES)

About 10–15% of urinary calculi are composed of struvite (ammonium magnesium phosphate). Struvite stones ("infection stones", urease or triple-phosphate stones), form most often in the presence of infection by urea-splitting bacteria.

Pathogenesis

Two conditions must coexist for the crystallization of struvite a urine pH of 7.2 or above and the presence of ammonia in the urine. A second mechanism by which bacterial infection may induce stone formation is by increasing crystal adherence. Urease producing bacteria hydrolyze urea to carbondioxide and ammonium molecules. Two molecules of molecules of ammonia are produced from one molecule of urea: neutralization of the base is incomplete. As a result of this, the urinary pH rises.

Clinical presentation:

Struvite calculus accounts are the majority of staghorn stones observed in most countries. They can grow quite large and may fill the collecting system. Struvite stones can form on a nidus of calcium oxalate stones and can grow quite rapidly. Most infection stones are radiopaque, but poorly mineralized matrix stones are faintly radiopaque or radiolucent. Women, perhaps because of their increased susceptibility to urinary tract infection, are more commonly affected than men.

The presence of a foreign body in the urinary tract and neurogenic bladder are main causes for struvite calculi. Patients with struvite stones may present acutely with fever, loin pain, dysuria, frequency and hematuria. Metabolic abnormalities are present in patient with mixed calciumoxalate and struvite stones but not in patients with pure struvite stones.

Cystine Stones:

They are uncommon cystine stones account for about 1% of all urinary calculi in the United States and occur only in patients who have cystinuria. Cystinuria is an autosomal recessive disorder of transmembrane cystine transport manifested in the intestine and in the kidney. Cystine stones are radiopaque, although less so than calcium oxalated stones. The

radiopacity is the result of the disulfide bond in cystine. The stones are hexagonal, Translucent while colour appear in acid urine and it is yellowish or pinkish colour when first removed but greenish hue colour when exposed to air and have a waxy appearance and very hard. They are often multiple, are large an may form staghorns. Cystinuria can cause renal stones in childhood, but the peak of clinical expression is in the second and third decades. The cystine stones form because cystine is poorly soluble within the range of normal urinary pH.

XANTHINE STONES:

These are extremely rare. They are smooth and round, brick – red in colour and a radiolucent. Xanthinuria is an inborn error of metabolism inherited as an autosomal recessive trait and characterized by a deficiency of xanthine oxidase. Serum uric acid levels are low, averaging less than 1.5 mg/dl. Serum and urine levels of xanthine and hypoxanthine are significantly increased. Xanthine stones develop because xanthine is less soluble than hypoxanthine.

Staghorn Calculi:

Struvite, cystine and uric acid stones often grow too large to enter ureter. They gradually fill the renal pelvis and may extend outward through the infundibula to the calyces themselves.

Matrix calculi:

Matrix calculi are found predominantly in individuals with infections caused by urease producing organisms. Proteus species are especially like to be associated with matrix calculi. These stone composed of coagulated mucoids with little crystalline component. They are radiolucent and may be confused with uric acid calculi. Their association with alkaline urinary tract infection. However, usually assists in making a presumptive diagnosis because uric acid calculi are usually formed in acidic, sterile urine. Stones composed of β 2-microglobulin, a protein that is filtered and appears in the urine, may form in the kidneys of uremic patients.

Inhibitors of stone formation:

Normal urine contain chelating agents,such as citrate,that inhibit the nucleation, growth, and aggregation of calcium-containing crystals.Other Endogenous inhibitors include

calgranulin (an S-100 calcium binding protein).Tamm-horsal protein,glycosaminoglycans,uropontine(a form of osteopontin), nephrocalcin(an acidic glycoprotein),prothrombin F1 peptide,and bikunin(uronic acid rich protein).

The biochemical mechanism of action of these substances have not yet been thoroughly elucidated. However,when these substances fall below their normal propotions,stones can form from an aggregation of crystals.sufficient intake of magnesium and citrate inhibit the formation of calcium oxalate and calcium phosphate stones.

FOOD AND DRINKS CONTAINING OXALATE:

High oxalate foods—higher to lower

- Spinach
- Sweet chard
- Wheat germ
- Soybean crackers
- Peanuts
- Okra
- Chocolate
- Black Indian tea
- Sweet potatoes

Medium –oxalate foods

- Grapes
- Celery
- Green pepper
- Red raspberries
- Fruit cake
- Strawberries
- liver

Being An Adult:

Kidney stones are most common in adult age 40 and older, though kidney stones may occur at any age.

Being A Man:

Men are more likely to develop kidney stones .although an increasing number of women are developing kidney stones.

Being Obese:

High body mass index (BMI), large waist size and wait gain have been linked to an increased risk of kidney stones.

Occupation:

Lonsdale (1968b.c) indicated that urinary calculi are much more likely to be found in individuals who have sedentary occupations. The highest were found in cooks and engineering room personnel. The risk of calcium oxalate and uric acid stones formation in astronauts because of hypercalciuria, hypocitraturia, decreased pH, and lower urinary volumes.

Digestive diseases and surgery:

Gastric bypass surgery, inflammatory bowel disease, such as crohns disease or chronic diarrhea can cause changes in the digestive process that affect absorbtion of calcium and water, increasing the levels of stone-forming substances in urine.

DIAGNOSIS:

The diagnosis of kidney stones is made on the basis of

- Information obtained from the history,
- Physical examination,
- Urinalysis, Radiographic studies,
- Ultrasound examination, Blood tests.

LABORATORY INVESTIGATIONS:

Microscopic examination of the urine, which may show

- red blood cells,
- bacteria,
- leukocytes,
- urinary casts and crystals.
- Urine Culture to identify any infecting organisms present in the urinary tract and Sensitivity to determine the susceptibility of these organisms to specific antibiotics.
- Complete Blood Count (CBC), looking for neutrophilia (increased neutrophil granulocyte count) suggestive of bacterial infection , as seen in the setting of struvite stones.
- Renal Function tests to look for abnormally high blood calcium blood levels (hypercalcemia).
- 24 Hour Urine Collection to measure total daily urinary volume, magnesium, sodium, uric acid, calcium, citrate, oxalate and phosphate.
- Collection of stones is useful. Chemical analysis of collected stones can establish their composition, which in turn can help future preventive and therapeutic management.

IMAGING TECHNIQUES:

Various imaging techniques are helpful in determining the presence of kidney stones. The best approach uses spiral (or helical) computed tomography scans.

- If these scans are not available, the patient will need
- ultrasound or
- standard x-rays.
- If no stones show up, but the patient has severe pain that suggests the presence of kidney stones, the next step is an intravenous pyelogram.

X-RAY:

A standard x-ray of the kidneys, ureters, and bladder may be a good first step for identifying stones, since many are visible on x-rays. Calcium stones can be identified on x-rays by their white color. Cystine crystals can also show up on x-rays.

EXCRETION UROGRAPHY:

It is the most useful investigation to establish the presence of calculus. It also shows where the stone is and gives important information about the function of the other kidney.

ULTRASOUND:

Ultrasound can detect clear uric acid stones and obstruction in the urinary tract. It is not useful for finding very small stones.

INTRAVENOUS PYELOGRAM:

In the procedure Intravenous pyelogram (IVP), the patient is injected with dye. X rays are taken as the dye travels through the urinary tract. This procedure is done to confirm the presence of kidney stones, although some stones may be too small to see.

RETROGRADE PYLOGRAM

It is a urologic procedure where the physician injects contrast into the ureter in order to visualize the ureter and kidney. The flow of contrast is opposite the usual flow of urine, hence the retrograde name.

SPIRAL (OR HELICAL) COMPUTED TOMOGRAPHY:

A type of computed tomography (CT) scan called a spiral or helical CT scan is currently the best method for diagnosing stones in either the kidneys or the ureters. This test is fast, does not require instruments or foreign chemicals to enter the body, and provides detailed accurate images of even very small stones. If stones are not present, a spiral CT scan can often identify other causes of pain in the kidney area. It is better than x-rays, ultrasound, and intravenous pyelogram -- the previous standard test for detecting kidney stones.

MAGNETIC RESONANCE IMAGING:

MRI techniques are showing promise for diagnosing urinary tract obstruction but do not yet accurately reveal small stones. Because no radiation is involved with MRI, however, it may prove to be a good option for pregnant women.

MANAGEMENT OF RENAL CALCULI:

Stones which are smaller than 5mm can be treated with hydration and pain medication. Stones longer than 5mm or stones that fail to pass are treated by Open surgical procedures.

ESWL – Extra corporeal shock wave lithotripsy for managing renal and uretral stones uses shock waves to fragment calculi.

Ureteroscopy have been developed for removal of ureteral stones.

MATERIALS AND METHODS

TITLE:

Clinical evaluation of siddha drug "KOOZHPAANDA CHOORANAM" (internal) in the treatment of Azhal kalladaippu noi (Renal calculi)

STUDY DESIGN AND CONDUCT OF STUDY:

- **Study type : Open clinical trial**
- **Study place :** OPD of Ayothidooss Pandithar Hospital, National Institute of Siddha, Tambaram sanatorium,Chennai-47.
- **Study period :** 12 months.
- **Sample size : 40**

TREATMENT:

DRUG : KOOZHPAANDA CHOORANAM

Reference:Aathmaratchamirtham ennum vaidhiya saara sangragam, page no-479, published by sri shanpaga .

Dosage	**:** Thirikadi pramanam (moondru viral alavu) – 1.5g (twice/day) after food
Vehicle	**:** Hot water
Route of Administration	: Oral Route
Duration of the Drug Administration	**:** 48 days.

SUBJECT SELECTION:

As and when patients reporting at OPD 1 Maruthuvam, Ayothidoss Pandithar Hospital, NIS with symptoms of inclusion criteria will be subjected to screening test and documentation will be done by using screening proforma.

SELECTION CRITERIA:

INCLUSION CRITERIA:

Patients who will fulfill any of the following criteria will be included in the study:

- Age:20-60 yrs
- Sex: Both sex
- Patients who are having the classical symptoms of abdominal pain and distension, pain from loin to groin, pain in urethra, agonizing pain, dysuria, oliguria, yellow coloured urination, burning micturition, haematuria, nausea, vomiting.
- Patient with renal calculus detected on USG Abdomen**,** Stone size:≥ 4mm & 10mm≤
- Patient willing to sign the informed consent stating that he/she will conscientiously stick to the treatment during 48 days but can opt out of the trial of his/her own conscious discretion.
- Patient who are willing to take Ultrasonography investigation (USG- Abdomen/ KUB) and provide blood for lab investigation.

EXCLUSION CRITERIA:

A patient who will meet any of the following criteria will be excluded from participation in this study:

Stone size > 10mm

- Pregnancy & Lactation
- Presence of any associated severe systemic illness eg.CA
- DM/HT
- Chronic kidney disease
- Cardiac disease

WITHDRAWAL CRITERIA:

- Intolerance to the drug and development of any serious adverse reactions during the trial period.
- Patient turned unwilling to continue in the course of clinical trial.
- Increase in severity of symptoms.
- Patient will not take medication regularly.

2 ASSESSMENTS AND INVESTIGATIONS:

a) Clinical assessment

Siddha assessment

b) Routine investigations:

1. Modern parameters
2. Siddha parameters

c) Specific investigations

a) CLINICAL ASSESSMENT:

Abdominal pain and distension,
Pain from loin to groin,
Pain in urethra, Agonising pain,
Dysuria, oliguria,
Yellow coloured urination,
Burning micturition, haematuria,
Nausea, vomiting.

SIDDHA ASSESSMENT:

Enn vagai thervu (Eight types of Examination):

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

❖ **Siddha parameters:**

- **Malam** - Niram:
  - Elakal / Erukal:
  - Muraigal (Times / day) :

- **Moothiram** (**urine**):
  - ✓ Neerkkuri (urine signs): Neikkuri:
    i. Niram:
    ii. Edai:
    iii. Manam:
    iv. Nurai:
    v. Enjal

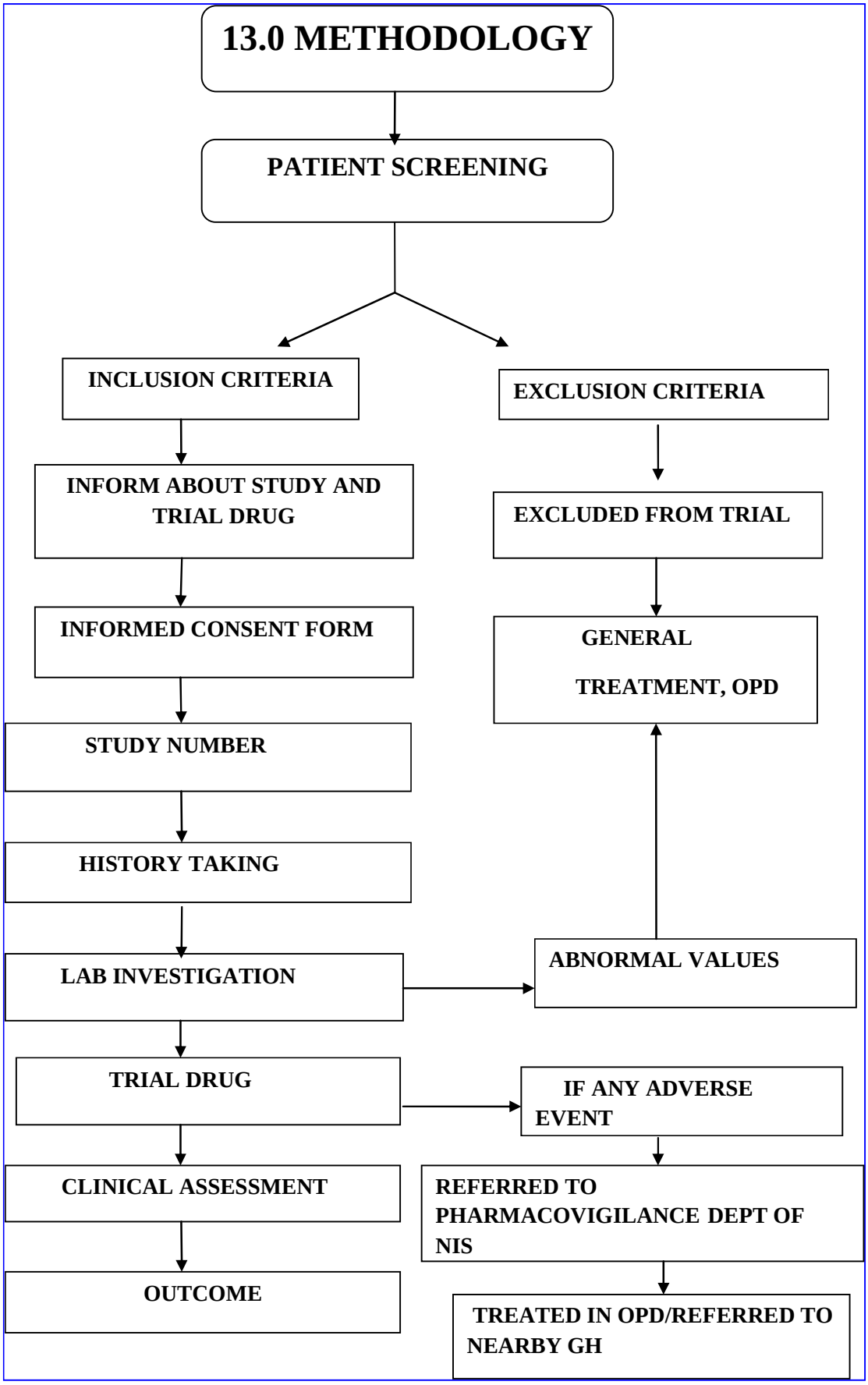
b) ROUTINE INVESTIGATIONS:

❖ **Modern parameters:**

- **Haematology**
- **Blood sugar level** - Fasting (mg/dl)
  Post prandial (mg/dl)
  Random (mg/dl)
- **Lipid profile**
- **Renal function test** - Blood Urea (mg/dl)
  Serum total Creatinine (mg/dl)
  Uric acid (mg/dl)
- **Liver function test**
- **Urine test**: Albumin
  Sugar (fastingand post prandial)
  Deposits
  Bile salts
  Bile pigments
- **Motion test**:

c) SPECIAL INVESTIGATIONS: USG Whole Abdomen/KUB
X-ray –KUB
S.calcium, S.phosphorus

13.0 METHODOLOGY



STUDY ENROLLMENT:

- In this clinical trial, patients reporting at OPD, Ayothidoss Pandithar Hospital,NIS with the clinical symptoms of Abdominal pain and distension, pain from loin to groin, pain in urethra, agonizing pain, dysuria, oliguria, yellow coloured urination, burning micturition, haematuria, and vomiting, nausea for enrolling in the study based on the inclusion and exclusion criteria.
- The patients enrolled in this study will be informed (Form V) about the objective of the study, trial drug, possible outcomes in their own language and terms understandable to them.
- After ascertaining the patientswillingness, informed consent will be obtained in the consent form (Form VI).
- All these patients will be given unique registration card which will contain's information regarding patients' Registration number, Address, Phone number and Doctors phone number etc. so as to report easily if any adverse reaction arise.
- Complete clinical history, complaints and duration, examination findings-- all will be recorded in the prescribed Proforma in the Clinical research form.
- Patients will be advised to take the trial drug and appropriate dietary advice (FormVIII) would be given according to the patients' perfect understanding.

CONDUCT OF THE STUDY:

Patients who have Satisified Inclusion Criteria will be Recruited for the Study .Then as Per Random Number Envelope which was serially kept and opened one by one for Allowing to a Particular Treatment Group.

As per siddha literature, before starting the treatment for AZHAL KALLADAIPPU, purgation will be given with the OP medicine Agasthiar Kuzhambu 130 mg od with 15ml of sangankuppi juice at early morning in empty stomach for one day.

Then The trial drug I "**KOOZHPAANDA CHOORANAM**" is given to patients at a dose of 1.5g twice a day continuously for 48 days. At each clinical visit clinical assessment will be done and prognosis will be noted.

Laboratory investigations and USG Abdomen will be done on 0^{th} day and 48^{th} day of the trial. If any of the trial patient who fails to collect the trial drug on the prescribed day but wants to continue in the trial, from the next day or two, he/ she will be allowed, but defaulters

of one week and more will not be allowed to continue and be withdrawn from the study with fresh case being inducted.

Follow-up:

After the end of the treatment, the patient is advised to visit the OPD for another 2months for follow-up. In this follow-up periods patient's clinical improvement will be recorded.

DATA MANAGEMENT:

- After enrolling the patient in the study, a separate file for each patient will be opened and all forms will be filed in the file. Study No. and Patient No. will be entered on the top of file for easy identification.Whenever the study patient visits OPD during the study period, the respective patient`s file will be taken and necessary recordings will be made at the assessment form or other suitable forms.
- The screening forms will be filed separately.
- The Data recordings will be monitored for completion by Guide (HOD, Dept. of Maruthuvam), SRO (Statistics) and the adverse event will be monitored by the members of the Pharmacovigilance department of NIS . All forms will be further scrutinized in presence of Investigator by Sr.Research Officer (Statistics) for logical errors and incompleteness of data to avoid any bias. No modification in the results is permitted for unbiased reports.

STATISTICAL ANALYSIS:

All the datawill be entered into computer using MS Access software with macro for logical errors and manually cross checked for data entry error.Then the data will be exported to STATAL/SPSS Software for univariate/multivariate analysis.Student 't' test and Paired 't' test and Mantel-Haenszel chi-square test will be performed for determining the significance of a particular effect variable.

OUT COME OF TREATMENT:

The study Outcome is mainly assessed by,

Primary out come : Clearance / reduction in the size of renal calculus in X-ray KUB and USG Abdomen .

Secondary out come : Complete reduction of clinical symptoms and improvement in other lab investigations.

ADVERSE EFFECT/SERIOUS EFFECT MANAGEMENT:

If the trial patient develops any adverse reaction, he/she will be referred to the pharmacovigilance department of NIS. The members of this department will assess the adverse event and recorded in the prescribed adverse reaction form. For any AE the investigator(PG Scholar) will be given the proper management at NIS OPD with free of cost.

ETHICAL ISSUES:

1. Informed consent will be obtained from the patient after explaining in the understandable language to the patient. The patient will be informed about the clinical trial, diagnosis, treatment and follow-up.
2. After the consent of the patient (through consent form) they will be enrolled in the study.
3. Treatment will be provided free of cost.
4. No other external or internal medicines will be used. There will be no infringement on the rights of patient.
5. To prevent any infection, while collecting blood sample from the patient, only disposable syringes, disposable gloves, with proper sterilization of lab equipments will be used.
6. The data collected from the patient will be kept confidentially.
7. The patients who are excluded [as per the exclusion criteria] will be given proper treatment, in OPD at NIS.
8. All adverse events occurs during the trial period will be recorded by the members of Pharmacovigilance department, NIS. If it is a mild event the patient will be treated at OPD of NIS. If the event will be severe the patient will be referred to nearby Govt. hospital and taken care of the patient until he/she will recover from the symptoms.The treatment will be provided at free of cost.

ASSESSMENT FORMS:

Form – I Screening and Selection Proforma

Form - II Case record form

Form - III Laboratory investigation form

Form – IV Drug Compliance form

Form – V Information sheet

Form - VI Consent form

Form –VII Withdrawal form/ Adverse drug reaction form/ Pharmacovigilance form

Form –VIII Dietary Advice form.

PREPARATION & PROPERTIES OF TRIAL DRUG

STANDARD OPERATING PROCEDURE FOR "KOOZHPAANDA CHOORANAM":

INGREDIENTS:

- Venpoosani (*Benincasa hispida,Cogn*) - 1 number
- Kadukkai (*Terminalia chebula,Retz*) - 1 kazhanju(5.1gms)
- Thandrikkai(*Terminalia bellirica,Roxb*) - 1 kazhanju(5.1gms)
- Athimadhuram (*Glycyrriza glabra,Linn.*) - 1 kazhaju(5.1gms)
- Eaelam (*Elettaria cardamomum,Maton*) - 1 kazhanju(5.1gms)
- Lavangam (*Syzygium aromaticum,Linn*) - 1 kazhanju(5.1gms)
- Seeragam (*Cuminum cyminum,Linn*) - 1 kazhanju(5.1gms)
- Chukku (*Zingiber officinale,Rosc*) - 1 kazhanju(5.1gms)
- Milagu (*Piper nigram,Linn*) - 1 kazhanju(5.1gms)
- Thippili(*Piper longum,Roxb*) - 1 kazhanju(5.1gms)
- Shanpaga poo (*Michelia chambaca.Linn*) - 1 kazhanju(5.1gms)
- Kalmadam - 1 kazhanju(5.1gms)
- Sugar(*Saccharum officinarum.Lin)* - Equevalant to the weight of the Chooranam obtained.
- Ghee - Adequate amount

SOURCE OF RAW DRUGS:

The above said raw drugs are purchased from a well reputed country shop at Chennai .The raw drugs are authenticated by Botanist in NIS, Pharmacognosist SCRI Arumbakkam, Chennai. The raw drugs had been purified and the medicine had been prepared as per SOP in the Gunapadam Laboratory of NIS, Chennai.

PURIFICATION OF INGREDIENTS:

Purification of Venpoosani:

The seeds and outer skin layer was removed.

Purification of Kadukkai:

Seeds are removed.

Purification of Thandrikkai:

Seeds are removed.

Purification of Chukku:

The raw drug was purified by soaked in the lime stone water. The outer layer was removed.

Purification of Milagu:

The raw drug was soaked in butter milk for 1 hour 15 minutes and then it was roasted.

Purification of Seeragam:

It was dried in sunlight.

Purification Thippili:

It was soaked in lemon juice.

Purification of Adhimaduram:

The raw drug was washed with clean water. The outer layer was peeled off and cut into small pieces and dried.

Purification of Eaelam:

It was dried in sunlight.

Purification of Lavangam:

It was dried in sunlight.

Purification of Shanpaga poo:

The petels from the flower are separated and dried.

Purification of Kalmadham:

Raw drug soaked in fresh milk for everyday (24 hours) 8 days and washed with clean water & dried.

Purification of sugar:

Dust was removed and powdered well.

METHOD OF PREPARATION:

PURIFIED INGREDIENTS:

1.Venpoosani (*Benincasa hispida,Cogn*)	-	1 number
2.Kadukkai(*Terminalia chebula,Retz*)	-	1 kazhanju(5.1gms)
3.Thandrikkai(*Terminalia bellirica,Roxb*)	-	1 kazhanju(5.1gms)
4.Athimadhuram (*Glycyrriza glabra,Linn*)	-	1 kazhaju(5.1gms)
5.Eaelam (*Elettaria cardamomum,Maton*)	-	1 kazhanju(5.1gms)

6.Lavangam (*Syzygium aromaticum,Linn*)	-	1 kazhanju(5.1gms)
7.Seeragam (*Cuminum cyminum,Linn*)	-	1 kazhanju(5.1gms)
8.Chukku (*Zingiber officinale,Rose*)	-	1 kazhanju(5.1gms)
9.Milagu (*Piper nigram,Linn*)	-	1 kazhanju(5.1gms)
10.Thippili(*Piper longum,Roxb*)	-	1 kazhanju(5.1gms)
11. Shanpaga poo (*Michelia chambaca.Linn*)	-	1 kazhanju(5.1gms)
12.Purified Kalmadam	-	1 kazhanju(5.1gms)
13.Powdered Sugar(*Saccharum officinarum*)	-	Equal to the amount of the Chooranam obtained.
14.Ghee	-	adequate amount
15.Cow's milk	-	sufficient quantity

METHOD OF PREPARATION:

Step 1:

The cleaned pumpkin was cut into small pieces & baked with the help of milk in a baking pan (Pittaviyal method). Then ghee was sprinkled over it and it was fried well.

Step 2:

Kalmadam had been powdered well in the kalvam.All the other purified ingredients from 2 to 12 are pulverized by an electric grinder into fine powder separately.

Step 3:

Finally all powdered drugs are mixed thoroughly and sieved by using a fine cloth (vasthira kayam).

Step 4:

Then obtained chooranam was baked again with help of the milk in the baking pan.Then it is dried again.

Step 5:

Then the powdered sugar is added to the chooranam and mixed well.

DRUG STORAGE:

The prepared drug was stored in a clean and dry wide mouthed glass bottle.

RAW DRUGS REVIEW

ATHIMADHURAM

Synonym: Athingam, Atti, Mathugam, Kundri ver

BOTANICAL ASPECT

Botanical name : Glycyrriza glabra, Linn

Synonym **:** Indian or Jamaica liquorice

Family **:** Papilionaceae

Organoleptic character:

Part used: Root

Taste **:** Sweet

Potency **:** Thatpam

Division **:** Sweet

Actions **:** Emollient, Demulcent, Mild Expectorant, Laxative, Tonic

General character:

கத்தியரி முப்பிணியால் வருபுண் தாகங்
கண்ணோய்உன் மாதம்விக்கல் வலிவெண் குட்டம்
பித்தமெலும் புருக்கி கிரிச்சரம் ஆவர்த்த
பித்தமத மூர்ச்சை விட பாகம் வெப்பந்

தத்திவரு வாதசோ ணிதங்கா மாலை
சருவவிடங் காமிநோய் தாது நட்டங்
குத்திருமல் ஆசியங்கம் இதழ்நோய் இந்து
குயப்புணும் போம் மதூகமெனக் கூறுங் காலே.

-தேரையர் குணவாகடம்

Chemical constituents:

Glycyrrhizin, Liquiritigenin, liquiritin, iso liquritigenin, formonetin, licuraside

Medicinal uses:

It is useful in abdominal pains.

Root in infusion, decoction is useful in dysuria.

LAVANGAM

Synonym: Anjugam, Urkadam, Karuvai kirambu, Sosam, Thirali, Vraangam

BOTANICAL ASPECT

Botanical name: Syzygium aromaticum,Linn

Synonym **:** Cloves

Family **:** Myrtaceae

Organoleptic character:

Taste **:** Pungent

Potency **:** Veppam

Division **:** Pungent

Actions **:** Antispasmodic, Carminative, Stomachic

General character:

பித்த மயக்கம் பேதியொடு வாந்தியும்போம்
சுத்தவிரத் தக்ககடுப்புந் தோன்றுமோ- மெத்த
இலவங்கங் கொண்டவருக் கேற் சுகமாகும்
மலமங்கே கட்டுமென வாழ்த்து.

சுக்கிலநட் டங்கர்ண சூர்வியங்க லாஞ்சனந்தாட்
சிக்கல்விடாச் சர்வா சியப்பிணியு - மக்கிக்குட்
டங்கப் பூவோடு தரிபடருந் தோன்றிலில்
வங்கப்பூ வோடுரைத்து வா.

-அகத்தியர் குணவாகடம்

Chemical constituents:

Ellagitanin, Eugenin, Caryophyllene oxide

Medicinal uses:

Flower buds and oil extracted from them constitute the drug. The oil of the drug possesses insecticidal, antibacterial and antifungal activity.

EAELAM

Synonym: Aanji, Koorangam, Thudi

BOTANICAL ASPECT

Botanical name : Elettaria cardamomum, Maton

Synonym : Cardamom seeds

Family : Zingiberaceae

Organoleptic character:

Taste : Pungent

Potency : Veppam

Division : Pungent

Actions : Stimulant, Carminative, Stomachic

General character:

தொண்டை வாய்கவுள் தாலுகு தங்களில்
தோன்றும் நோயாதி சாரம்பன் மேகத்தால்
உண்டை போல்எழுங் கட்டி கிரிச்சரம்
உழலை வாந்தி சிலந்தி விஷஞ்சுரம்
பண்டை வெக்கை விதாகநோய் காசமும்
பாழுஞ் சோமப் பிணிவிந்து நட்டமும்
அண்டை ஈளைவன் பித்தம் இவைக்கெல்லாம்
ஆல மாங்கமழ் ஏல மருந்ததே...

- தேரையர் குணவாகடம்

Chemical constituents:

α – pinene, sabinene, myrcene, limonene, cineol, cymene, me heptenone, linalool, α – terpineol, linalool, linalyl acetate

SHANPAGA POO

BOTANICAL ASPECT

Botanical name : Michelia champaca.Linn

Synonym : Golden champa

Family : Magnoliaceae

Organoleptic character:

Taste : Pungent

Potency: Veppam

Division: Pungent

Actions: Stimulant, Carminative, Diuretic, Tonic

General character:

வாத பித்தம் அத்திசுரம் மாமேகம் சுத்த சுரந்
தாதுநட்டங் கண்ணழற்சி தாங்கவே - மாதே கேள்!
திண்புறு மனக்களிப் பாந் திவ்யமனம் உட்டினஞ்சேர்
சண்பகப் பூவதற்குத் தான்

-அகத்தியர் குணவாகடம்

Chemical constituents:

Volatile essential oil, fixed oil, resin, tannin, mucilage, starch, sugar

Medicinal uses:

Flowers used in dyspepsia, nausea, fever and also useful as a diuretic and febrifuge.

CHUKKU

Synonyms:

Arukkan, Athagam, Aarthragam, Upakullam, Ularantha inji, Kadupathiram, Sundi sondi, Sawpannam, Sawvarnam, Navasuru, Nagaram, Manowshatham, Vichva peshatham, Vidamudiya amirtham, Verkombu.

BOTANICAL ASPECT

Botanical name : Zingiber officinale,Rosc

Synonym : Ginger

Family : Zingiberaceae

Organoleptic character:

Part used : Tuber (dried)

Taste : Pungent

Potency : Veppam

Division : Pungent

Actions : Stimulant, Carminative, Stomachic

General character:

சூலைமந்தம் நெஞ்செரிப்பு தோடமேப் பம்மழலை
மூலம் இரைப்பிருமல் மூக்குநீர் - வாலகப
தோடமதி சாரந் தொடர்வாத குன்மநீர்த்
தோடம்ஆ மம்போக்குஞ் சுக்கு.

-அகத்தியர் குணவாகடம்

Chemical constituents:

ar – curcumene, α – farnesene, β – farnesene, linalool, β – sesqui phellandrene, gingerol, zingerone, dehydro gingerol, aspartic acid, threonine, serine, glycine, cystine, valine, iso leucine, leucine, arginine

Medicinal uses:

Ginger is extremely useful in the treatment of dyspepsia, flatulence, colic, vomiting, spasm and other painful affections of the stomach and the bowels, not accompanied by fever.Externally it is used as a rubefacient, that is, counter – irritant for relief of muscular pain

KADUKKAI

Synonyms:

Akkoodam, Anganam, Anthan, Abaranam, Apaiyan, Amaritham, Amalai, Amutham, Ammai, Amrutha, Arabi, Arithagi, Aliyan, Avviyatha,, Eresagi, Aamavathi.

BOTANICAL ASPECT

Botanical name : Terminalia chebula,Retz

Synonym : Ink nut

Family : Combretaceae

Organoleptic character: Part used : Fruit

Taste : Sour, sweet, pungent, bitter

Potency : Veppam

Division : Sweet

General character:

தாடை கழுத்தக்கி தாலு குறியிவிடப்
பீடை சிலிபதமுற் பேதிமுடம் - ஆடையெட்டாத்
தூலமிடி புண்வாத சோணிகா மாலையிரண்
டாலமிடி போம்வரிக்கா யால்.

- குணபாடம் - மூலிகை வகுப்பு

Chemical constituents:

Chebulin, tannin – terchebin

Medicinal uses:

The fruit is highly nutricious and could be used as an important source of vitamin C, protein and mineral nutrient.

The fruit is one of the constituents of Triphala, having anti- inflammatory and analgesic activities.

The powder of the fruit is used in vomiting and abdominal distension.

SEERAGAM

Synonyms:

Asai, Seeri, Upakupeesam, Narseeri, Thuthasaambalam, Pirathiviga, Pithanasini, Poosanakudori, Methiyam.

BOTANICAL ASPECT

Botanical name : Cuminum cyminum,Linn

Synonym : Cumin seeds

Family : Apiaceae

Organoleptic character:

Part used: Seed

Taste : Pungent, Sweet

Potency : Thatpam

Division : Sweet

Actions : Carminative, Stimulant, Stomachic, Astringent

General character:

பித்தமெனு மந்திரியைப் பின்னப் படுத்தியவன்
சத்துருவை யுந்துறந்து சாதித்து - மத்தனெனும்
ராசனையு மீவென்று நண்பைப் பலப்படுத்தி
போசனகு டாரிசெயும் போர்.

- தேரன் வெண்பா

Chemical constituents:

α – pinene, α – phallandrene, α- terpinene, limonene, p – cymene, cuminal dehyde

Medicinal uses:

Cumin fruits are very useful in digestive disorders like biliousness, morning sickness, indigestion, atomic dyspepsia, diarrhea and flatulent colic.

THANDRIKKAI

Synonyms:

Aksham, Akkantham, Akkathan, Amutham, Ambalaththi, Aaraamam, Erikatpalam, Kanthakatpalam, Kanthugan, Kulithurumam, Kalanthunri, Sathagam, Thaapamaari, Vanthiyam,
Vithiyam, Vibithagam, Pothavasagam, Thanikkai.

BOTANICAL ASPECT

Botanical name : Terminalia bellirica,Roxb

Synonym **:** Belleric myrobalan

Family **:** Combretaceae

Organoleptic character:

Part used : Leaves, fruit, seed

Taste **:** Pungent

Potency **:** Veppam

Division : Sweet

Actions : Astringent, Expectorant, Laxative, Tonic

General character:

சிலந்திவிடம் காமியப்புண் சீழான மேகங்
கலந்துவரும் வாதபித்தங் காலோ - டலர்ந்துடலில்
ஊன்றிக்காய் வெப்ப முதிரபித் துங்கரக்குந்
தான்றிக்காய் கையிலெடுத் தால்.

ஆணிப்பொன் மேனிக் கழகும் ஒளியுமிகும்
கோணிக்கொள் வாதபித்தக்கொள்கைபோம் - தனிக்காய்
கொண்டவர்க்கு மேகமறும் கூறா அனற்றணியும்
கண்டவர்க்கு வாதம்போம் காண்.

குணபாடம் - மூலிகை வகுப்பு

Chemical constituents:

Cardiac glycoside – belliricanin, gallic acid, ellagic acid, ethyl gallate, mannitol, glucose, galactose, fructose and rhamnose.

Medicinal uses:

In Jammu and Kashmir, a decoction of fruit and the stem bark is given in urinary disorders

THIPPILI

Synonyms:

Aarkathi, Unsaram, Ulavainaasi, Kaaman, Kudari, Koolagam, Kooli, Koozhaiyurukki, Saram, Saadi, Thulavi, Maagathi, Kanai, Sowndi, Thanduli, Kanam, Kalini, Paanam, Pippili, Vaitheegi, Ambu, Aathi marunthu.

BOTANICAL ASPECT

Botanical name : Piper longum,Roxb

Synonym : Long pepper

Family : Piperaceae

Organoleptic character:

Part used : Fruit, rice

Taste : Sweet

Potency : Thatpam

Division : Sweet

General character:

இருமல் குன்மம் இரைப்பு கயப்பிணி
ஈளை பாண்டு சந்யாசம் அரோசகம்
பொருமல் ஊதை சிரப்பிணி மூர்ச்சைநோய்
பூரிக் குஞ்சல தோடம் பீலிகமும்
வரும லப்பெகுக் கோடு மகோதரம்

வாதம் ஆதிமுத் தோடஞ் சுரங்குளிர்
பெருமாலைப்புரி மேகப் பிடகமும்
பேருந் திப்பிலிப் பேரங்குரைக்கவே.

- தேரையர் குணவாகடம்

Chemical constituents:

Pipernonaline, Piper undecalidine

Medicinal uses:

It is used as a general tonic and haematinic, as cholagogue in obstruction of bile duct and gall bladder.

MILAGU

Synonyms:

Kalinai, Kari, Kaayam, Koolakam, Thirangal, Mirial, Sarumapantham, Vallisam, Maasam, Kurumilagu, Malaiyaali.

BOTANICAL ASPECT

Botanical name: Piper nigram, Linn

Synonym **:** Black pepper

Family **:** Piperaceae

Organoleptic character:

Part used: Seed, Climber

Taste **:** Bitter, Pungent

Potency **:** Veppam

Division : Pungent

Actions : Acrid, Carminative, Antiperiodic, Rubefacient, Stimulant, Resolvent, Antivatha, Antidote

General character:

சீதசுரம் பாண்டு சிலேத்மங் கிராணிகுன்மம்
வாதம் அருசிபித்தம் மாமூலம் - ஓதுசன்னி
யாசமபஸ் மாரம் அடன்மேகம் காசமிவை
நாசங் கறிமிளகினால்

- அகத்தியர் குணவாகடம்

Chemical constituents:

Guineesine, Pellitorine, Piperidine, Feruperine, Dehydro feruperine, N – trans - feruloyl – piperidine

Medicinal uses:

Fruits are used as an excellent carminative and digestive, stomachic in atonic dyspepsia, flatulent colic.

VENPOOSANI

Synonyms: Saambal poosani, Thadiyankaai, Perumpoosani, Venpoosanai

BOTANICAL ASPECT

Botanical name : Benincasa hispida,Cogn
Synonym : White pupmpkin
Family : Cucurbitaceae

Organoleptic character:

Part used: Seed, Fruit
Taste : Sweet
Potency : Thatppam
Division : Sweet
Actions : Diuretic, Styptic, Tonic, Alterative, Nutrient.

General character:

பெரும்பூ சணிக்காய்க்குப் பித்தமோ டுட்காய்ச்சல்
அருஞ்சார நீர்க்கட் டருகல் - மருந்திடுல்
பித்தசுரம் அஸ்திசுரம் பேய்வறட்சி மேகமும்போம்
மெத்த அனிலமுறும் விள்

- அகத்தியர் குணவாகடம்

Chemical constituents:

Lupenol, α- sitosterol and their acetates, Adenine, Trigonelline, Histidine

Medicinal uses:

The fruits are cooling, diuretic.

The fruits are useful in haemorrhages from internal organs and fever.

SUGAR

Organoleptic character:

Taste : Sweet

Potency : Seetham

Division : Sweet

General character:

சீனிச் சர்க்கரைக்குத் தீராத வன்சுரமுங்
கூனிக்கும் வாதத்தின் கூட்டுறவும் - ஏனிற்கும்
வாந்தி யொடுகிருமி மாறாத விக்கலுமே
போந்திசையை விட்டுப் புரண்டு.

-அகத்தியர் குணவாகடம்

Chemical constituents:

Swertisin, Sachaftoside, Iso schaftoside, Trinsin - 7- glucoside

KALMADHAM

கண்ட பிணிமேகங் கல்லொடுநீ ரூனடைப்பு
வண்டற் கிரிச்சரநோய் மரபிரமி - யுண்டலினாற்
பன்மதஞ்சேர் தாதுநட்டம் பன்னுமிந்நோய்க் கூட்டத்துட்
கன்மதஞ்சே ரச்சரக்குக் காண்.

- பதார்த்த குண விளக்கம்

Indications:

It cures urinary symptoms associated with venereal disease, renal calculus, anuria, stricture of the urethra, difficulty in passing urine, gonorrrhoea and impotence.

Actions: Diuretic

THE INGREDIENTS KOOZHPAANDA CHOORANAM

VENPOOSANI

EAELAM

SEERAGAM

ATHIMADHURAM

CHUKKU

MILAGU

THIPPILI

KADUKKAI

THANDRIKKAI

LAVANGAM

SHANPAGA POO

SUGAR

KALMADHAM

KOOZHPAANDA CHOORANAM

BIOCHEMICAL ANALYSIS OF TRIAL DRUG

BIOCHEMICAL ANALYSIS OF KOOZHPAANDA CHOORANAM

S.NO	EXPERIMENT	OBSERVATION	INFERENCE
	1.Test For Acid Radicals		
1.	**Test For Sulphate :** 2ml of the above prepared extract is taken in a test tube to this added 2ml of 4% ammonium oxalate solution.	No cloudy appearance present	Absence of Sulphate
2.	**Test For Chloride:** 2ml of the above prepared extract is added with 2ml of dil-HNO_3 till the effervescence ceases. Then 2 ml of silver nitrate solution is added.	Cloudy appearance present	**Presence of Chloride**
3	**Test For Phosphate:** 2ml of the extract is treated with 2ml of ammonium molybdate solution and 2ml of con.HNO_3	No yellow colour appearance	Absence of Phosphate
4.	**Test For Carbonate:** 2ml of the extract is treated with 2ml magnesium sulphate solution	Cloudy appearance Present	**Presence of Carbonate**
5.	**Test For Fluoride & Oxalate:** 2ml of extract is added with 2ml of dil. Acetic acid and 2ml calcium chloride solution and heated.	No cloudy appearance present.	Absence of fluoride and oxalate
6.	**Test For Nitrate:** 1gm of the substance is heated with copper turning and concentrated H2So4 and viewed the test tube vertically down	No Brown gas is evolved	Absence of Nitrate

7.	**Test For Sulphide:** 1gm of the substance is treated with 2ml of con. HCLs	No Rotten Egg Smelling gas evolved	Absence of Sulphide
8.	**Test For Nitrite:** 3 drops of the extract is placed on a filter paper, on that - 2 drops of acetic acid and 2 drops of Benzidine solution is placed.	No Characteristic changes	Absence of Nitrite
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.	Bluish green colour flame not appeared	Absence of Borate
	II. Test For Basic Radicals		
1.	**Test For Lead:** 2ml of the extract is added with 2ml of potassium iodine solution.	No yellow precipitate is obtained.	Absence of Lead
2.	**Test For Copper:** 2ml of extract is added with excess of ammonia solution.	No blue color precipitate formed.	Absence of Copper
3.	**Test For Aluminium:** To the 2ml of extract sodium hydroxide is added in drops to excess.	No characteristic changes.	Absence of Aluminium
4.	**Test For Iron:** To the 2ml of extract add 2ml of ammonium thiocyanate solution.	Mild red colour appear	**Presence of Iron**
5	**Test For Zinc**: To 2ml of the extract sodium hydroxide solution is added in drops to excess	White precipitate is not formed	Absence of Zinc

6.	**Test For Calcium:** 2ml of the extract is added with 2ml of 4% ammonium oxalate solution	Cloudy appearance and white precipitate is not obtained	Absence of Calcium
7.	**Test For Magnesium**: To 2ml of extract sodium hydroxide solution is added in drops to excess.	White precipitate is not obtained	Absence of Magnesium
8.	**Test For Ammonium**: To 2ml of extract few ml of Nessler's reagent and excess of sodium hydroxide solution are added.	No Brown colour appeared	Absence of Ammonium
9.	**Test For Potassium:** A pinch of substance is treated with 2ml of sodium nitrite solution and then treated with 2ml of cobalt nitrate in 30% glacial acetic acid.	No Yellowish precipitate is obtained.	Absence of Potassium
10.	**Test For Sodium:** 2 pinches of the substance is made into paste by using HCl and introduced into the blue flame of Bunsen burner.	Yellow colour flame is not appeared	Absence of Sodium
11.	**Test For Mercury:** 2ml of the extract is treated with 2ml of sodium hydroxide solution.	No yellow precipitate is obtained	Absence of Mercury
12.	**Test For Arsenic:** 2ml of the extract is treated with 2ml of sodium hydroxide solution.	No brownish red precipitate is obtained	Absence of Arsenic

S.NO	EXPERIMENT	OBSERVATION	INFERENCE
	III.Miscellaneous		
1.	**Test For Starch:** 2ml of extract is treated with weak iodine solution	Blue colour developed	**Presence of Starch**
2.	**Test For Reducing Sugar:** 5ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The colour changes are noted.	Brick red colour developed	**Presence of Reducing sugar**
3.	**Test For The Alkaloids:** a) 2ml of the extract is treated with 2ml of potassium lodide solution. b) 2ml of the extract is treated with 2ml of picric acid. c) 2ml of the extract is treated with 2ml of phosphotungstic acid.	Yellow colour developed	**Presence of Alkaloid**
4.	**Test For Tannic Acid:** 2ml of extract is treated with 2ml of ferric chloride solution	Block precipitate is obtained	**Presence of Tannic acid**
5.	**Test For Unsaturated Compound**: To the 2ml of extract 2ml of Potassium permanganate solution is added.	Potassium permanganate is not decolourised	Absence of unsaturated compound
6.	**Test For Amino Acid**: 2 drops of the extract is placed on a filter paper and dried well..	No Violet colour developed	Absence of Amino acids
7.	**Test For Type Of Compound**: 2ml of the extract is treated with 2 ml of ferric chloride solution.	No Brown colour developed	Absence of Oxy quinole, epinephrine and Pyro catechol

		No red colour developed	Anti pyrine, Alipathic amino acids and meconic acid are absent.
		No violet colour developed	Salicylate and resorcinol are absent.
		No Blue colour developed.	Morphine, Phenol cresol and hydroquinone are absent

RESULTS OF BIOCHEMICAL ANALYSIS

ANALYTICAL TEST	INFERENCE
Sulphate	Absence of Sulphate
Chloride	**Presence of Chloride**
Phosphate	Absence of Phosphate
Carbonate	**Presence of Carbonate**
Fluoride &Oxalate	Absence of fluoride and oxalate
Nitrate	Absence of Nitrate
Sulphide	Absence of Sulphide
Nitrite	Absence of Nitrite
Borate	Absence of Borate
Lead	Absence of Lead
Copper	Absence of Copper
Aluminium	Absence of Aluminium
Iron	**Presence of Iron**
Zinc	Absence of Zinc
Calcium	Absence of Calcium
Magnesium	Absence of Magnesium
Ammonium	Absence of Ammonium
Pottasium	Absence of Potassium
Sodium	Absence of Sodium
Mercury	Absence of Mercury
Arsenic	Absence of Arsenic
Starch	**Presence of Starch**
Reducing sugar	**Presence of Reducing sugar**
Alkaloids	**Presence of Alkaloid**
Tannic acid	**Presence of Tannic acid**
Unsaturated compound	Absence of unsaturated compound
Amino acid	Absence of Amino acids
Oxyquinole, Epinephrine, Pyrocatechol	Absence of Oxy quinole, epinephrine and Pyro catechol.

PHYSICOCHEMICAL ANALYSIS

QUANTITAIVE ANALYSIS REPORT

PHYSICO – CHEMICAL ANALYSIS OF KOOZHPANDA CHOORANAM

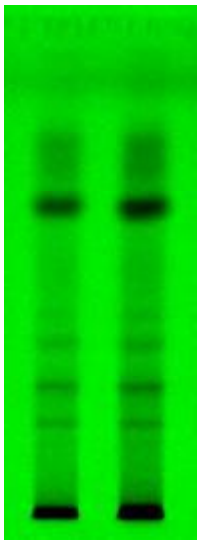
S.NO	Physico chemical Parameter	Mean
1.	Loss on Drying at 105^{o}C	8.359%
2.	Total Ash	10.696%
3.	Water soluble Ash	2.734%
4.	Acid Insoluble Ash	5.952%
5.	Water soluble Extractive	21.99%
6.	Alcohol Soluble Extractive	21.615%
7.	Assay for Calcium	0.501%
8.	PH	3.87

HPTLC Report of Koozhpaanda chooranam

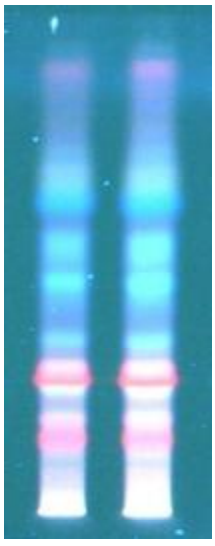
Defatted Chloroform extract

Solvent system: Chloroform: Ethyl acetate: Formic acid (7: 3: 2 drops)

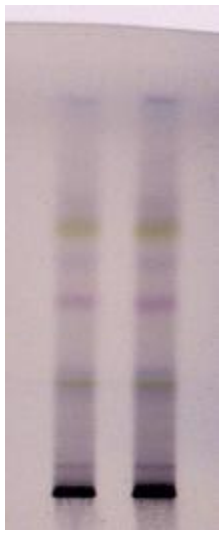
Track 1: 10 µl; Track 2: 15 µl



UV 254nm

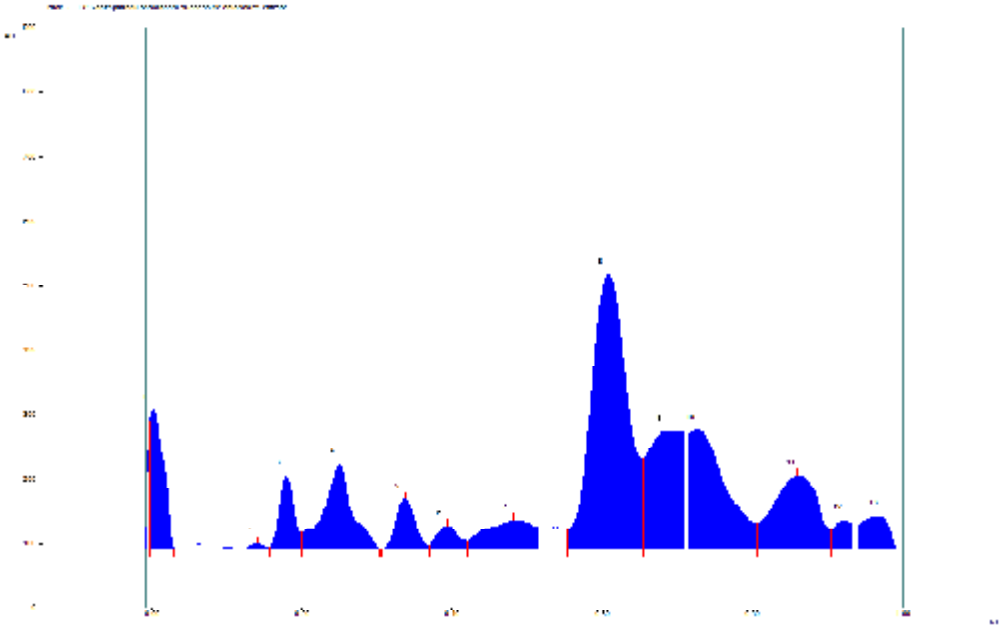


UV 366nm



After dipping in Vanillin-sulphuric acid reagent

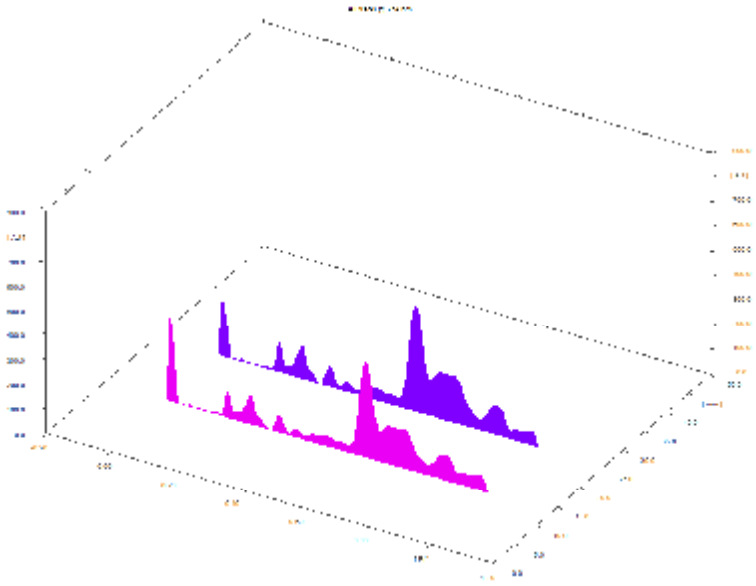
UV 254 nm		**UV 366 nm**		**After dipping in Vanillin-sulphuric acid reagent**	
R_f	Colour	R_f	Colour	R_f	Colour
0.18	Green	0.13	Pink	0.07	Purple
0.25	Green	0.18	Pinkish white	0.25	Yellowish grey
0.33	Green	0.23	Pink	0.29	Purple
0.40	Green	0.25	Pinkish white	0.45	Magenta
0.62	Green	0.33	Pale blue	0.54	Purple
0.69	Green	0.43	Pale blue	0.62	Grayish yellow
0.74	Green	0.52	Pale blue		
		0.61	Blue		
		0.88	Pink		



Track 2, ID: Koozhpaandu chooranam successive chloroform extract

Peak	Start Position	Start Height	Max Position	Max Height	Max %	End Position	End Height	Area	Area %
1	-0.00 Rf	199.4 AU	0.00 Rf	218.2 AU	13.25 %	0.03 Rf	0.6 AU	3221.8 AU	5.99 %
2	0.13 Rf	0.8 AU	0.14 Rf	10.2 AU	0.62 %	0.16 Rf	3.7 AU	138.3 AU	0.26 %
3	0.16 Rf	3.9 AU	0.18 Rf	115.4 AU	7.01 %	0.20 Rf	26.6 AU	1853.2 AU	3.45 %
4	0.20 Rf	26.7 AU	0.25 Rf	132.5 AU	8.04 %	0.31 Rf	0.4 AU	4144.2 AU	7.71 %
5	0.31 Rf	0.2 AU	0.34 Rf	79.0 AU	4.79 %	0.37 Rf	7.7 AU	1656.1 AU	3.08 %
6	0.37 Rf	8.0 AU	0.40 Rf	37.4 AU	2.27 %	0.42 Rf	13.3 AU	885.0 AU	1.65 %
7	0.42 Rf	13.6 AU	0.48 Rf	45.3 AU	2.75 %	0.52 Rf	35.8 AU	2402.7 AU	4.47 %
8	0.56 Rf	32.1 AU	0.61 Rf	427.6 AU	25.96 %	0.66 Rf	42.3 AU	16953.5 AU	31.54 %
9	0.66 Rf	143.0 AU	0.69 Rf	183.5 AU	11.14 %	0.71 Rf	81.2 AU	6940.9 AU	12.91 %
10	0.72 Rf	181.3 AU	0.73 Rf	185.1 AU	11.24 %	0.81 Rf	41.8 AU	7616.8 AU	14.17 %
11	0.81 Rf	42.0 AU	0.86 Rf	115.7 AU	7.02 %	0.91 Rf	31.6 AU	5591.7 AU	10.40 %
12	0.91 Rf	31.7 AU	0.92 Rf	45.3 AU	2.75 %	0.94 Rf	39.1 AU	809.2 AU	1.51 %
13	0.94 Rf	39.0 AU	0.97 Rf	52.3 AU	3.17 %	1.00 Rf	0.2 AU	1533.4 AU	2.85 %

Finger print profile and R_f table of 15 µl of defatted Chloroform extract of Koozhpaanda chooranam at 254 nm



3D chromatogram of 10 and 15 µl of defatted Chloroform extractof Koozhpaanda chooranam at 254 nm

OBSERVATION AND RESULTS

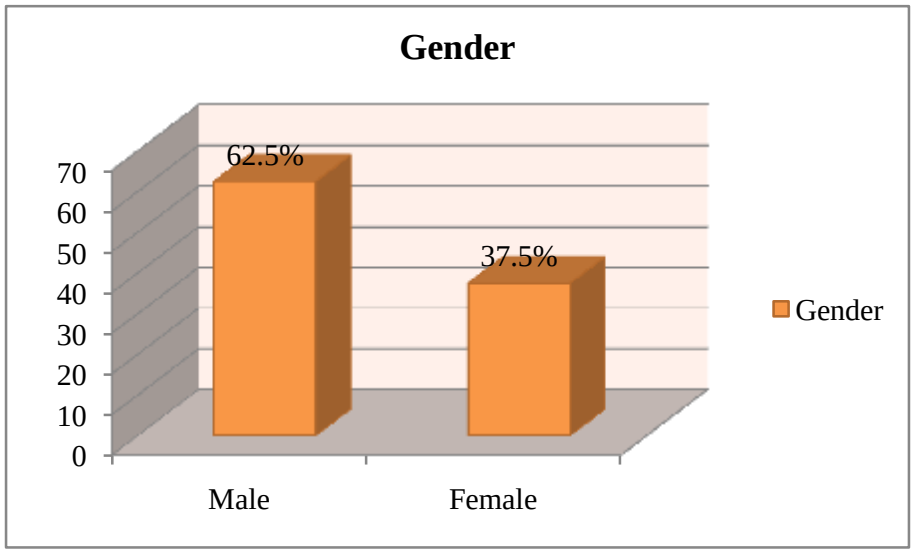
OBSERVATION AND RESULTS

The observation and results have been tabulated under the following headings.

1. Gender distribution
2. Kaalam distribution (According to age)
3. Occupational status
4. Dietary habits
5. Marital status
6. Habits
7. Treatment History
8. Family History
9. Paruvakaalam (Season)
10. Thinai (Land)
11. Yakkai Ilakkanam (Physical Constitution)
12. Gunam
13. En Vagai thervugal
14. Distribution by naadi
15. Udal Kattugal
16. Distribution of kosangal
17. Distribution of Uyir thaathukal
18. Distribution of Neerkkuri
19. Distribution of Neikkuri
20. Distribution of calculus in urinary system
21. Chronicity of illness
22. Distribution of cases by Clinical features
23. Improvement in clinical features
24. Improvement in USG abomen.

1. Distribution Of Cases By Gender

Gender	No of case	Percentage
Male	25	62.5%
Female	15	37.5%
Total	40	100%



Inference:

Among the 40 cases the prevalence of the disease was found to be higher in male i.e 62.5% (25 cases).

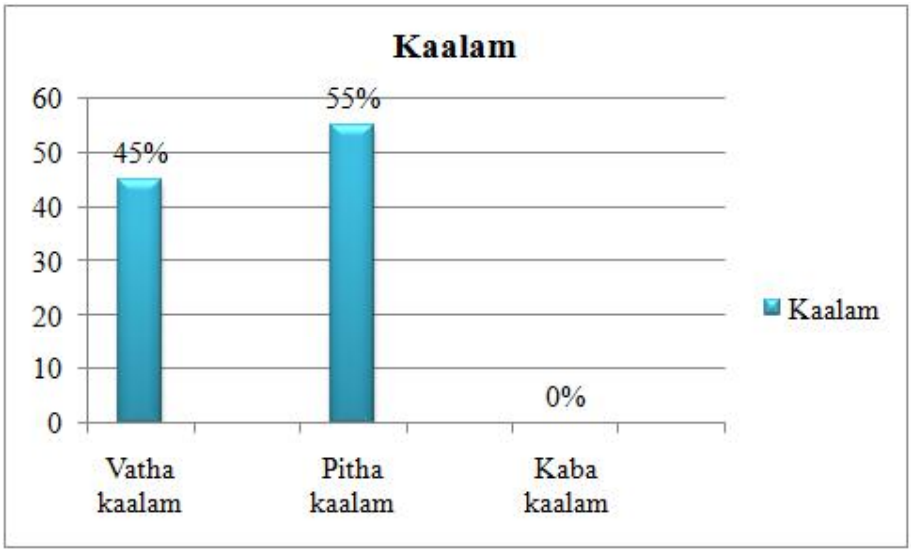
2. Distribution Of Cases By Kaalam (According to Age)

In Siddha literature human life has been divided into three periods as follows

1. Vaatham
2. Pitham
3. Kabam

The duration of each period is said to be 33 years

SI.No	Kaalam(Age)	No of cases	Percentage
1	Vatha Kaalam(1-33 Years)	18	45%
2	Pitha Kaalam(34-66 Years)	22	55%
3	Kaba Kaalam(67-100 Years)	0	0%
4	Total	40	100%

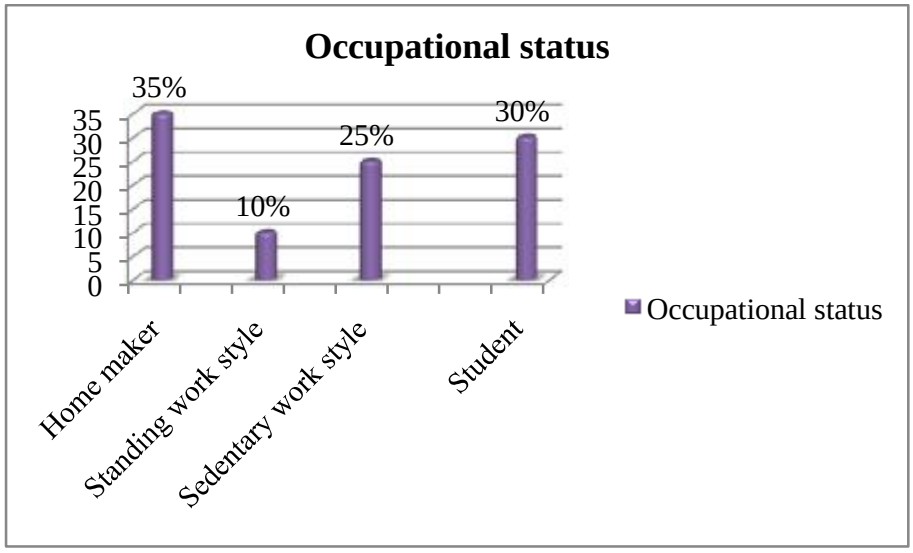


Inference:

Out of 40 cases, 22 case (55%) were found to be in pitha kaalam i.e 34 to 66 years and 18cases (45%) were found to be in vatha kaalam i.e upto33 years.

3.Distribution Of Cases By Occupational Status

SI.No	Nature of work	No of cases	Percentage
1	Home Maker	14	35%
2	Standing work style	4	10%
3	Sedentary work style	10	25%
4	Student	12	30%
	Total	40	100%



Inference:

The majority of patients in this study were home makers (35%).

4. Distribution Of Cases By Dietary Habit

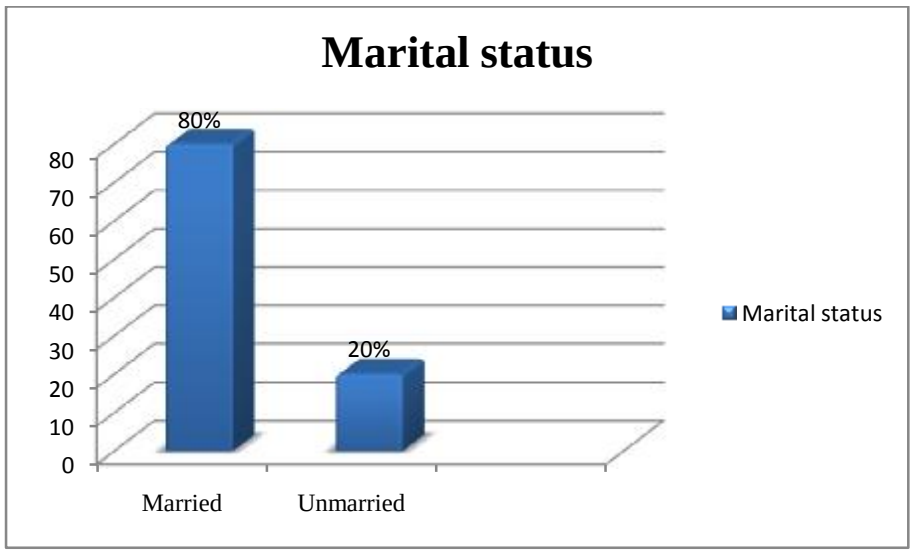
Dietery Habit	No of cases	Percentage
Vegetarian	4	10%
Non – vegetarian	36	90%
Total	40	100%

Inference:

Among the 40 cases, 36 cases (90%) were Non Vegetarian and 4 cases (10%) were vegetarian.

5. Distribution Of Cases By Marital status

Marital status	No of cases	Percentage
Married	32	80%
Unmarried	8	20%
Total	40	100%

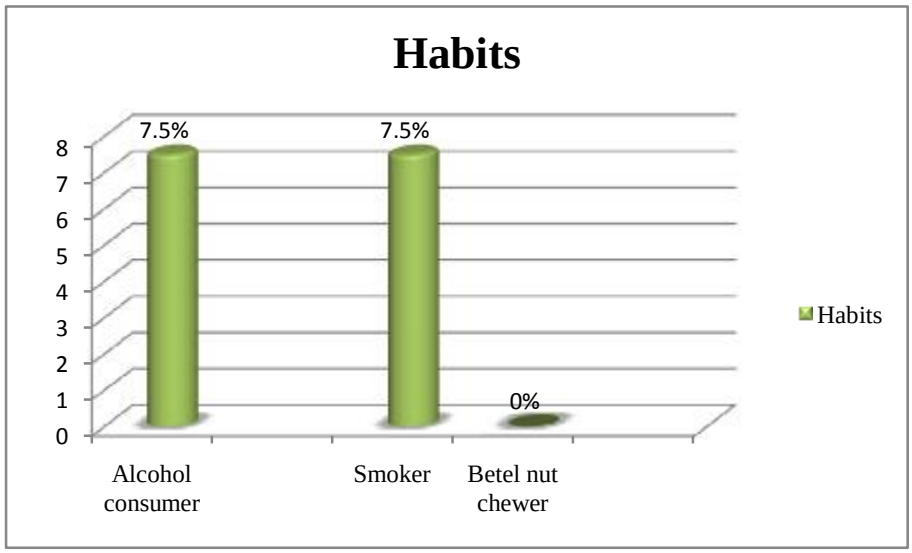


Inference:

Among 40 cases, 32 cases (80%) were married, 8 cases (20%) were unmarried.

6. Distribution Of Cases By Habits

Habits	No of cases	Percentage
Alcohol consumer	3	7.5%
Smoker	3	7.5%
Betel nut chewer	0	0%

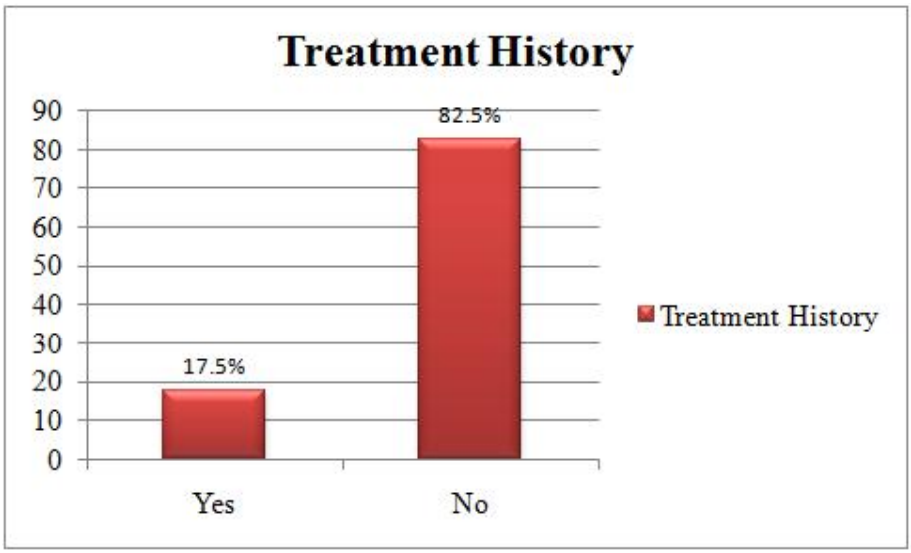


Inference:

Among 40 cases, 3 cases (7.5%) were alcohol consumer, 3 cases (7.5%) were smoker.

7. Distribution Of Cases By Treatment history

Treatment History	No of Cases	Percentage
Yes	7	17.5%
No	33	82.5%
Total	40	100%



Inference:

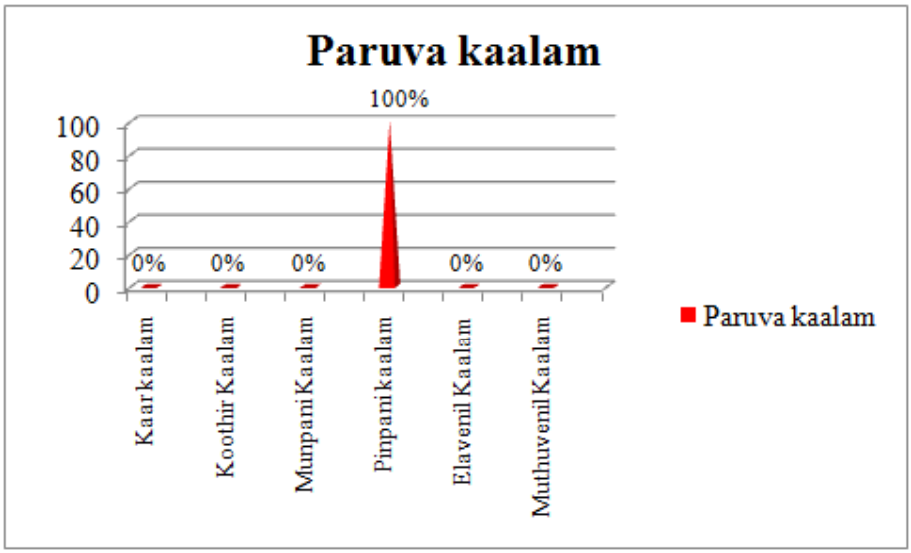
Among 40 cases, 7 cases (17.5%) had taken allopathic treatment in the past and had discontinued the same. The rest of the 33 cases (82.5%) had not taken any other drugs prior to enrolling for the study.

8. Distribution Of Cases By Family History

Among 40 cases, there was no family history.

9. Distribution Of Cases By Paruva kaalam (Season)

SI.No	Paruva Kaalam	No. of cases	Percentage
1	Kaar Kaalam (Aug 17- Oct 17)	0	0%
2	Koothir Kaalam (Oct 18 – Dec 15)	0	0%
3	Munpani Kaalam (Dec 16 – Feb 12)	0	0%
4	Pinpani Kaalam(Feb 13 – Apr 13)	40	100%
5	Elavenil Kaalam (Aprl 14 – Jun 16)	0	0%
6	Muthuvenil Kaalam (Jun 17 – Aug 16)	0	0%
	Total	40	100%

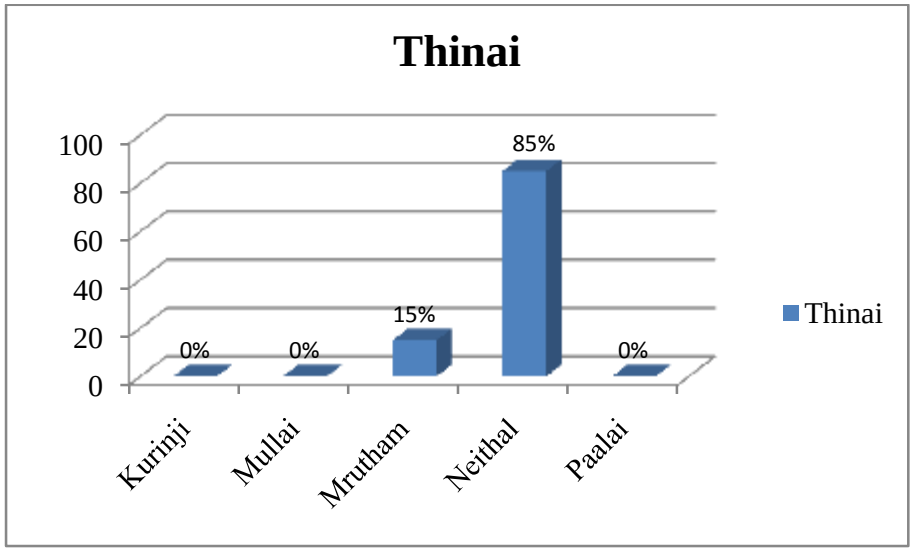


Inference:

Among the 40 cases all the 40 cases (100%) were admitted in Pinpani kaalam (Feb 13-Aprl13).

10. Distribution Of Cases By Thinai (Land)

Thinai (Land)	No of cases	Percentage
Kurinji (Hill)	0	0%
Mullai (Forest)	0	0%
Marutham (Fertile)	6	15%
Neithal(Coastal)	34	85%
Paalai(Desert)	0	0%
Total	0	100%

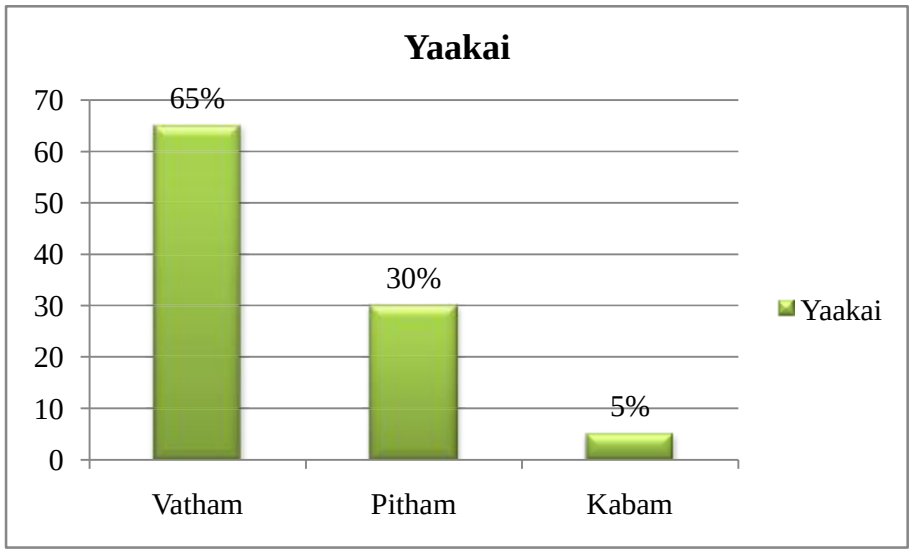


Inference:

Among the 40 cases 34 cases (85%) were from Neithal Thinai and 6 cases (15%) were from Maarutham thinai.

11. Distribution Of Cases By Yaakai

Yaakai	No of cases	Percentage
Vatham	26	65%
Pitham	12	30%
Kapham	2	5%
Total	40	100%

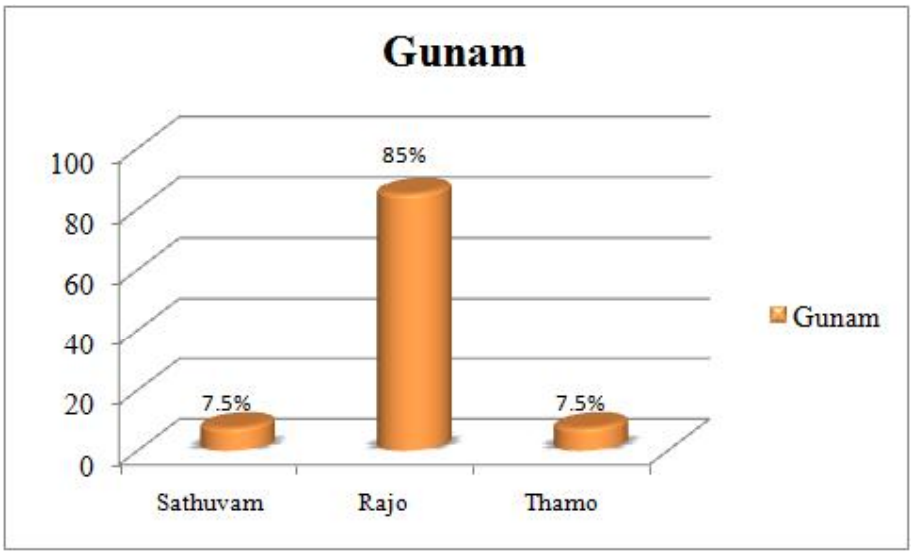


Inference:

Among 40 cases 26 cases (65%) were Vatha thegi, 12 cases (30%) were Pitha thegi and 2cases (5%) Were Kapha thegi.

12. Distribution Of Cases By Gunam (Quality and characters)

Gunam	No of cases	Percentage
Sathuvagunam	3	7.5%
Rajogunam	34	85%
Thamogunam	3	7.5%
Total	40	100%

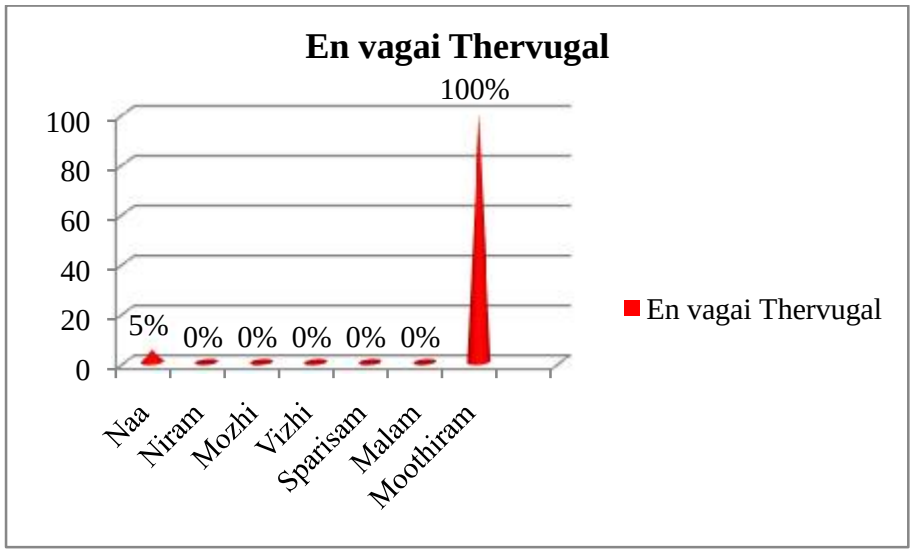


Inference:

Out of 40 cases, 34 cases (85%) were found to posses Rajo gunam, 3 cases (7.5%) were found to posses Sathuva gunam and 3 cases were (7.5%) found to posses Thamo gunam.

13. Distribution Of Cases By En vagai Thervugal

SI.No	En Vagai Thervugal	No of cases	Percentage
1	Naa	2	5%
2	Niram	0	0%
3	Mozhi	0	0%
4	Vizhi	0	0%
5	Sparisam	0	0%
6	Malam	0	0%
7	Mothiram	40	100%
8	Naadi		
	a.Vathapitham	32	80%
	b.Pithavatham	7	17.5%
	c.Vathakabham	1	2.5%
	d.Pithakabham	0	0%

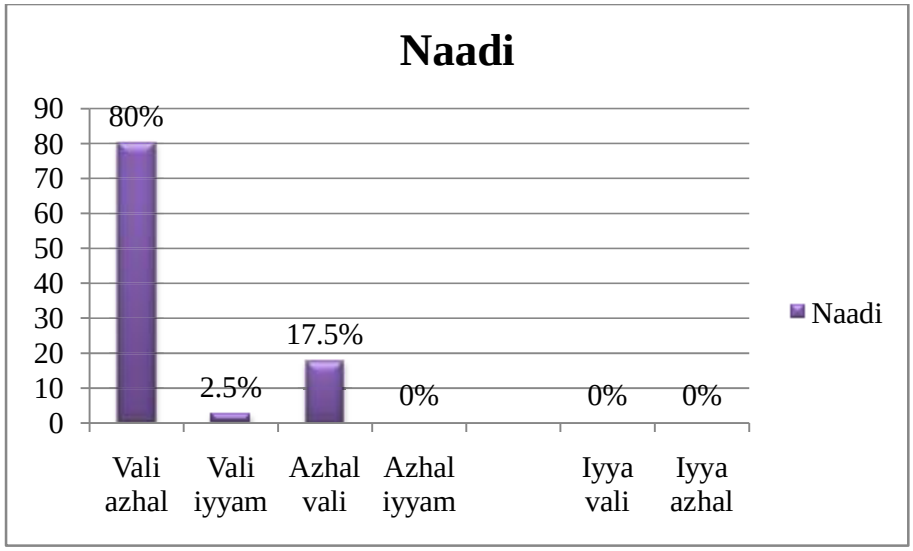


Inference:

In En vagaithervukal, Mothiram was found to be affected in all the 40 cases (100%). Naa was affected in 2 cases (5%).

14. Distribution Of Cases By Naadi

Naadi	No of cases	Percentage
Vali Azhal	32	80%
Vali Iyyam	1	2.5%
Azhal vali	7	17.5%
Azhal Iyyam	0	0%
Iyya vali	0	0%
Iyya Azhal	0	0%
Total	40	100%

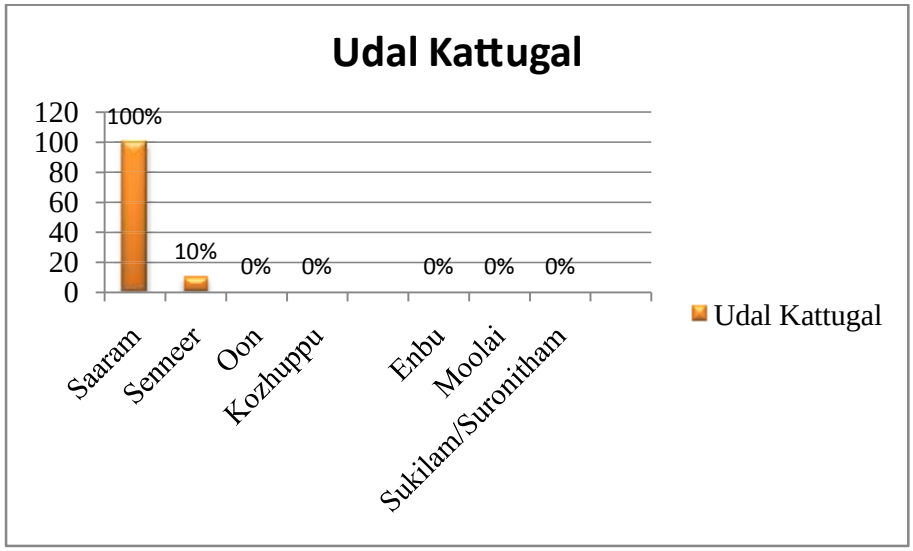


Inference:

Among the 40 cases Vali azhal naadi was felt in 32 cases (80%).Azhal Vali naadi was felt in 7 cases(17.5%). Vali iyyam naadi was felt in 1 case (2.5%).

15. Distribution Of Cases By Udal kattukal

SI.No	Udal Kattugal	No of cases	Percentage
1	Saaram	40	100%
2	Senneer	4	10%
3	Oon	0	0%
4	Kozhuppu	0	0%
5	Enbu	0	0%
6	Moolai	0	0%
7	Sukkilam/ Suronitham	0	0%

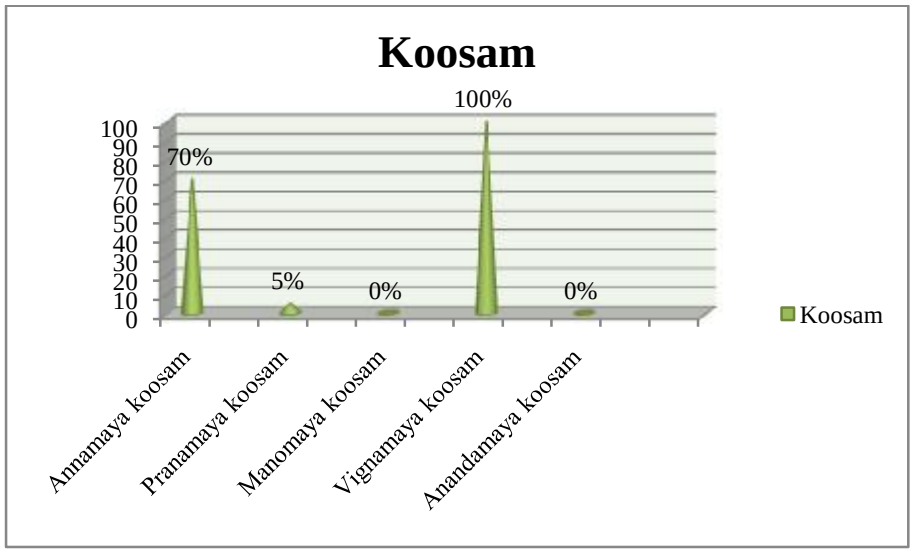


Inference:

Among 40 patients, Saaram was affected (general tiredness) in all the 40 cases (100%).Senneer was affected (reduction in Hb level) in 4 cases (10%) .

16. Distribution Of Cases By Kosangal

Kosam	No of cases	Percentage
Annamaya kosam	28	70 %
Pranamaya kosam	2	5%
Manomaya kosam	0	0%
Vignamaya kosam	40	100%
Anandamaya kosam	0	0%



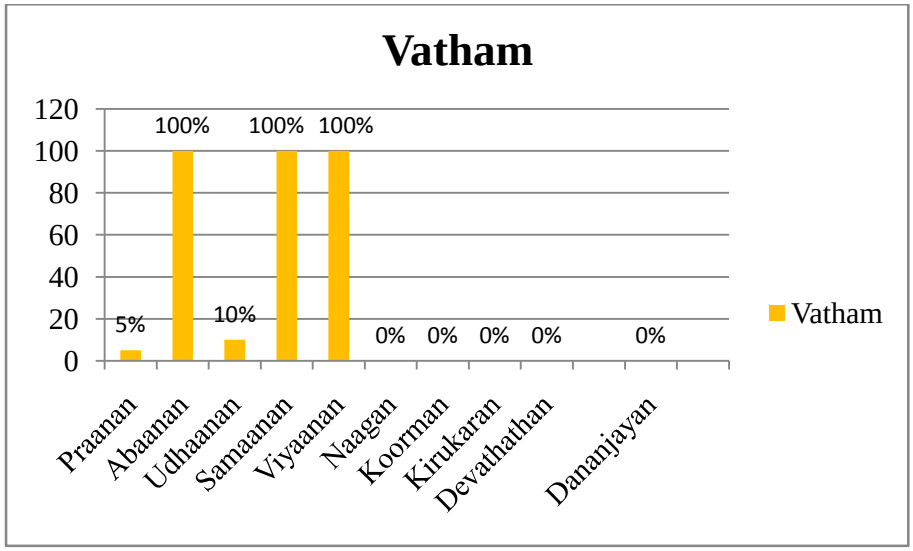
Inference:

Among 40 cases, Vignanamaya kosam was affected (pain from loin to groin) in all the 40 cases (100%), Annamaya kosam was affected (abdominal pain) in 28 cases (70%), Pranamaya kosam was affected (cold,cough) in 2 cases (5%), other kosangal Manomaya kosam, Anandamaya kosam were normal in almost all the 40 cases (100%).

17. Distribution Of Cases By Uyirthathukkal

Vatham

SI.No	Classification of vatham	No of cases	Percentage
1	Praanan	2	5%
2	Abaanan	40	100%
3	Udhaanan	4	10%
4	Samaanan	40	100%
5	Viyaanan	40	100%
6	Naagan	0	0%
7	Koorman	0	0%
8	Kirukaran	0	0%
9	Devathathan	0	0%
10	Dananjayan	0	0%

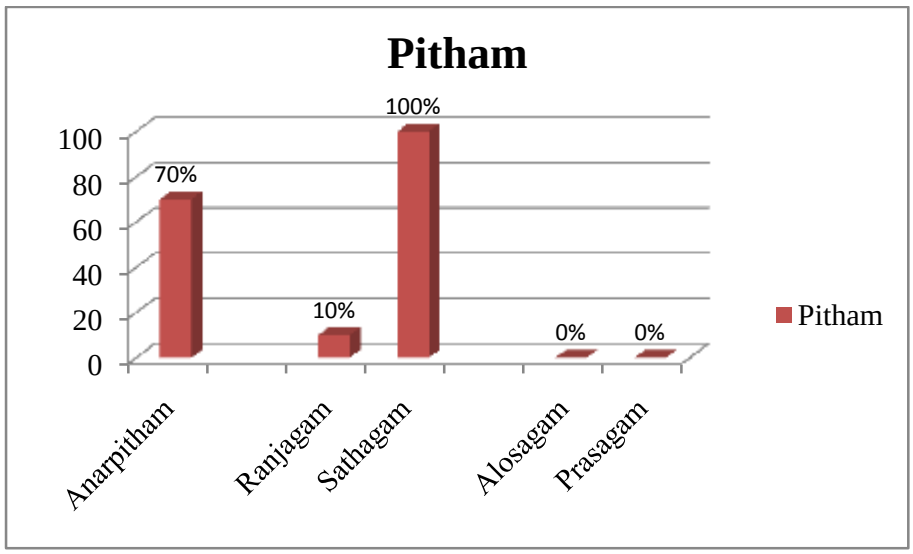


Inference:

Among 40 cases, Abaanan (burning micturition), samaanan (Abanan,viyanan affected),viyaanan (pain from loin to groin) were affected in all the 40 cases (100%).Udhaanan was affected(nausea and vomiting) in 4 cases (10%), Praanan (cold,cough) was affected in 2 cases (5%).

Pitham

SI.No	Classification of Pitham	No of cases	Percentage
1	Anarpitham	28	70%
2	Ranjagam	4	10%
3	Saathagam	40	100%
4	Alosskam	0	0%
5	Prasakam	0	0%

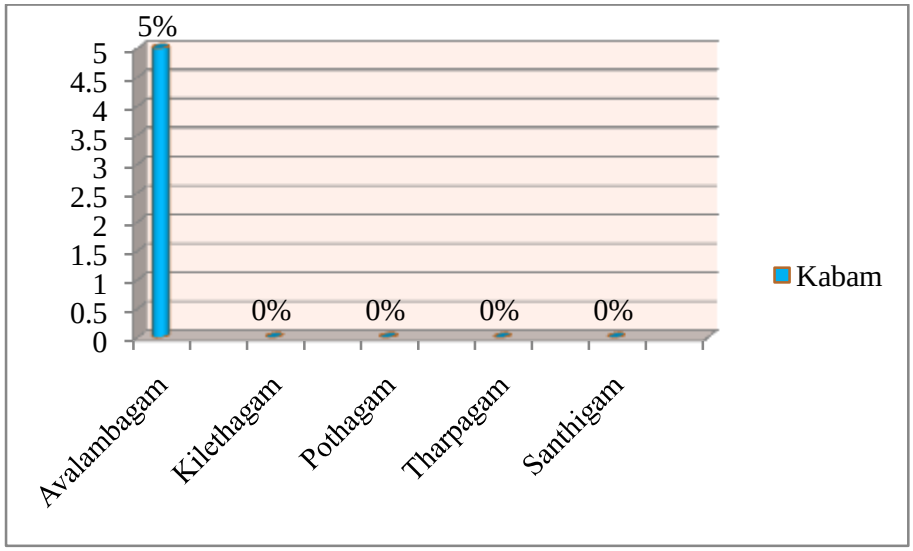


Inference:

Among 40 cases, Sathaga pitham was affected (unable to perform their routine duties) in all the 40 cases (100%).Anar pitham was affected (abdominal pain) in 28 cases (70%), Ranjaga pitham was affected (Hb level reduced) in 4 cases (10%).

Kabam

SI.No	Classification of Kabam	No of cases	Percentage
1	Avalambagam	2	5%
2	Kelethagam	0	0%
3	Pothagam	0	0%
4	Tharpagam	0	0%
5	Santhigam	0	0%

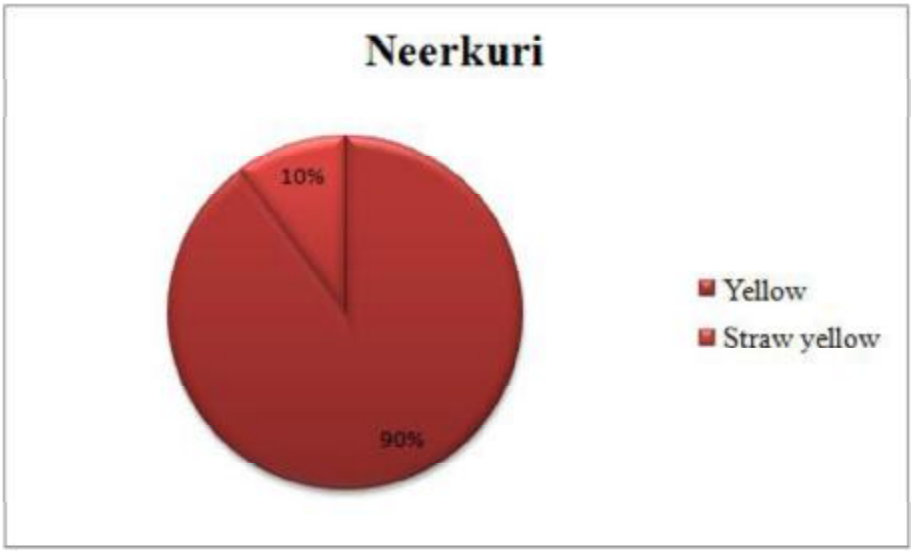


Inference:

Avalambagam (Cold, cough) was affected in 2 cases (5%).

18. Distribution Of Cases By Neerkuri

Neer	No of cases	Percentage
Yellow	36	90%
Straw Yellow	4	10%
Total	40	100%



Inference:

Colour- yellow coloured urine was observed in 36 cases (90%) and straw coloured urine was observed in 4 cases (10%).

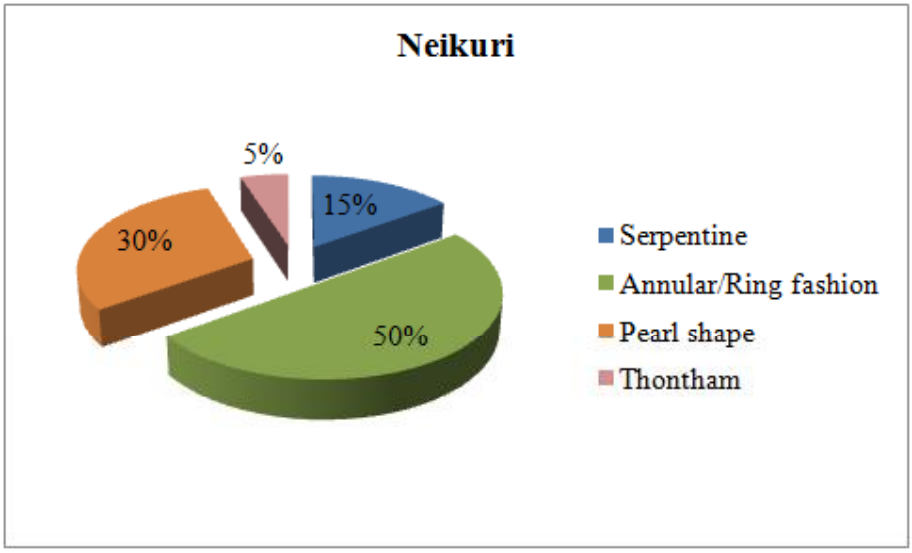
Volume - The volume of urine was reduced in amount in 15 cases (37.5%), rest of cases had normal urine volume.

Enjal- Enjal was found to be normal in almost all cases (100%).

Manam, Edai, Nurai - No other changes were observed.

19. Distribution Of Cases By Neikuri

Types	No of cases	Percentage
Serpentine (Vatha neer)	6	15%
Annular/ Ring fashion (Pitha neer)	20	50%
Pearl shape (Kaba neer)	12	30%
Thontham	2	5%
Total	40	100%

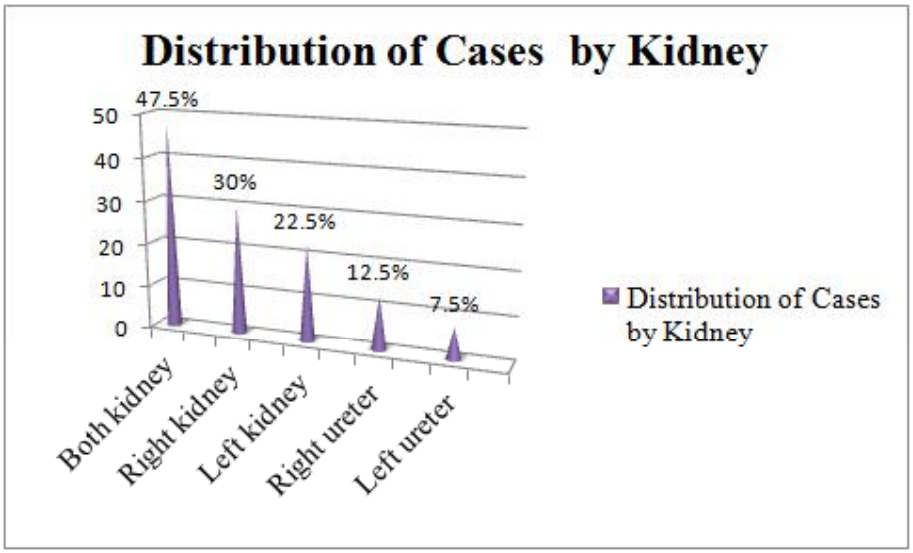


Inference:

Among 40 cases,in 6 cases (15%)the neikuri was observed as serpentine like (Vatha neer).In 20 cases (50%) the neikuri was observed as annular like (Pitha neer).In 12 cases (30%) the neikuri was observed as pearl like (Kaba neer).In 2 cases (5%) the neikuri was observed as thontham type.

20. Distribution Of Cases By Urinary System

Kidney	No of cases	Percentage
Both Kidney	19	47.5%
Right Kidney	12	30%
Left Kidney	9	22.5%
Right Ureter	5	12.5%
Left Ureter	3	7.5%

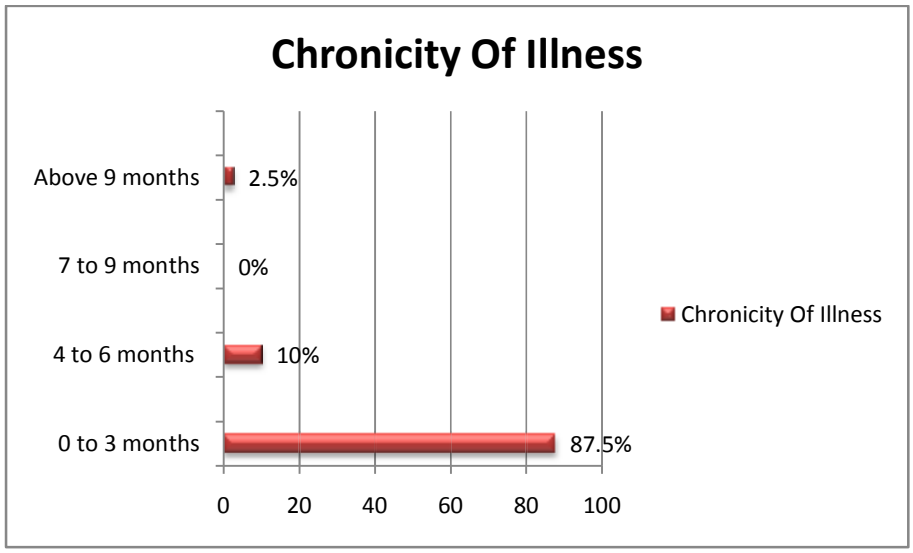


Inference:

Among 40 cases, 19 cases (47.5%) had Bilateral renal caculi,21 cases (52.5%) had Unilateral renal calculi,Out of them 12 cases (30%) in Right kidney and 9 cases (22.5%) in Left kidney,8 cases (20%) had Ureteric calculi.

21. Distribution Of Cases By Chronicity Of Illness

SI.No	Duration of illness	No of cases	Percentage
1	0 to 3 months	35	87.5%
2	4 to 6 months	4	10%
3	7 to 9 months	0	0%
4	Above 9 months	1	2.5%
	Total	40	100%

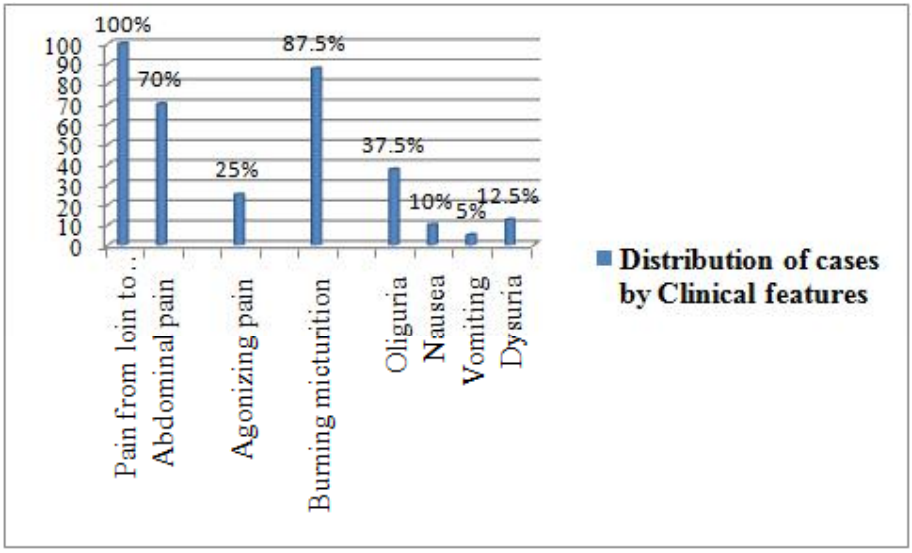


Inference:

Among 40 cases 0 to 3 months chronicity of illness was found in 35cases (87.5%), 4 to 6 months chronicity of illness was found in 4 cases (10%) , above 9 months chronicity of illness was found in1 case (2.5%) .

22. Distribution Of Cases By Clinical features

Clinical features	No of cases	Percentage
Pain from loin to groin	40	100%
Abdominal pain	28	70%
Agonizing pain	10	25%
Burning micturition	35	87.5%
Oliguria	15	37.5%
Nausea	4	10%
Vomiting	2	5%
Dysuria	5	12.5%

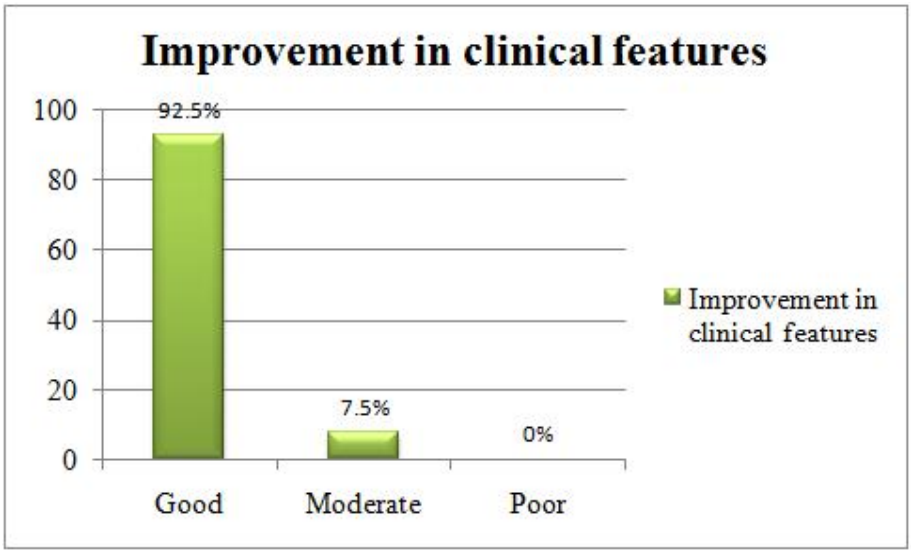


Inference:

In clinical features,all the 40 cases (100%) had pain from loin to groin region.35 cases(87.5%) had burning micturition and 28 cases (70%) had abdominal pain,4 cases (10%) had nausea,10 cases (25%) had agonizing pain,2 cases (5%) had vomiting and 15 cases (37.5%) had oliguria .

23. Improvement In Clinical Features After Treatment

Improvement	No of Cases	Percentage
Good	37	92.5%
Moderate	3	7.5%
Poor	0	0%
Total	40	100%



Inference:

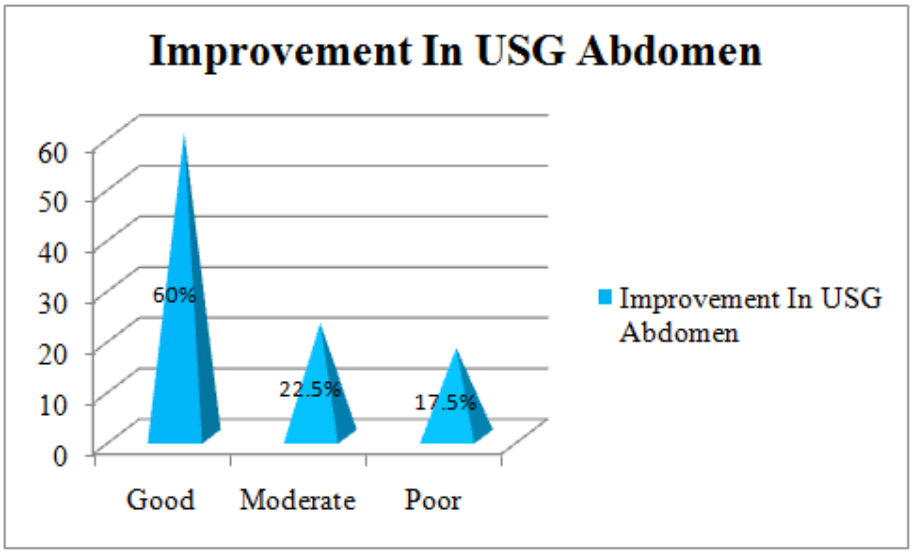
Symptoms such as burning micturition, abdominal pain, yellow coloured urination, oliguria, nausea, vomiting, agonizing pain were relieved in almost all the 40 cases (100%). Pain from loin to groin region was relieved in 37 cases (92.5%) except in 3 cases (7.5%) Pain from loin to groin region persisted.

Improvement:

Among 40 cases 37cases (92.5%) had clinically good improvement (symptoms completely relieved) after treated with trial drug, 3 cases (7.5%) had moderate improvement (symptoms reduced), there was nil poor improvement (symptoms not reduced).

24. Improvement In USG Abdomen

Improvement	No of cases	Percentage
Good	24	60%
Moderate	9	22.5%
Poor	7	17.5%
Total	40	100%



Inference:

Among the 40 cases stone completely dissolved in 13 cases (32.5%), Size (>3mm) and number of stone is reduced in 11 cases (27.5%) ,in 9 cases (22.5%) stone size was reduced less than 3mm, In 7 cases (17.5%) there was no changes in size of stone but clinical symptoms were completely relieved. Based on above results, 24 cases (60%) showed good improvement and 9 cases (22.5%) cases showed Moderate improvement, 7 cases (17.5%) showed poor prognosis.

Good – normal study (stone completely dissolved)

Reduced in its number

Reduced its size more than3mm

Moderate - Reduced stone size less than 3mm

Poor - no change in stone size and increase in stone size.

STATISTICAL ANALYSIS

All collected data were entered into MS Excel software using different columns as variables and rows as patients. SPSS software was used to perform statistical analysis. Basic descriptive statistics include frequency distributions and cross-tabulations were performed. The quantity variables were expressed as Mean ± Standard Deviation and qualitative data as percentage. A probability value of <0.05 was considered to indicate as statistical significance. Paired 't' test was performed for determining the significance between before and after treatment.

Paired 't' test for renal calculi before and after treatment

Group	Mean	Std	t value	P Value
Before	11.4025	6.798849	8.4271	P<0.0001
After	6.47	7.269473		

Renal calculi before treatment is 11.4025 and after treatment is 6.47 which is statistically significant (p<0.0001).

Paired 't' test for Clinical symptoms at before and after treatment

Group	Mean	Std	t value	P Value
Before	4.225	1.097491	23.4248	P<0.0001
After	.1	.3789324		

Clinical symptoms before treatment is 4.225 and after treatment is .1 which is statistically significant (p<0.0001).

LAB INVESTIGATION PARAMETERS

BLOOD INVESTGATION BEFORE AND AFTER TREATMENT						
SI NO	OPD NO	AGE/SEX	Hb gm%		TRBC/cumm	
			BT	AT	BT	AT
1	H 19492	50/M	14.5	14.7	4.7	4.9
2	H 15645	31/M	15	14.7	4.8	4.6
3	H 20423	33/M	14.8	14.7	4.8	4.7
4	H 16032	21/M	14.3	14.5	4.8	4.9
5	H 19053	51/M	15	14.7	5.3	5.2
6	H 18411	32/M	13.3	15	4.2	5.2
7	H 13757	34/M	11.1	11.5	6.4	6.0
8	H 23990	34/M	16.4	15.2	5.7	5.2
9	H 01697	23/M	16.6	15	5.3	4.6
10	H 24900	50/M	13.8	13.2	4.5	4.2
11	H 23888	35/F	13	13.2	5	5.2
12	H 11568	37/M	13.2	13.4	4.9	4.7
13	H 18479	29/M	13.8	13.5	5.2	5.4
14	H 05729	52/F	12.4	13	5	5.1
15	H 25307	26/M	15.9	15.7	5.6	5.5
16	H 21974	48/F	12	12.2	4.7	4.8
17	H 27215	20/M	16.3	16.3	5.2	5
18	H 20060	31/M	14	14.2	4.2	4.5
19	H 25423	36/F	12.5	13.1	4.2	4.5
20	H 01812	48/M	14.2	14.4	4.8	4.6
21	H 13275	49/F	13.1	13.8	4.5	4.7
22	H 27409	26/M	14.4	14.5	5	5
23	H 23014	24/M	15.7	15.7	5	5.1
24	H 27381	37/M	16.8	16.8	5.8	5.6
25	H 21784	60/F	12.4	11.7	4.2	4.1
26	H 25573	38/M	16.1	16	5.6	5.3
27	H 30917	37/M	13.9	13.5	5.1	5
28	H 31520	44/M	14.6	14.6	4.7	4.7
29	H 31567	35/F	13.1	13.4	4.8	4.9
30	H 32015	33/M	12.6	12.7	4.4	4.4
31	H 31212	35/F	11.9	11.5	4.4	4.2
32	H 33137	35/F	10.9	11.1	5	4.8
33	H 34776	31/F	12.7	12	4.5	4.3
34	H 29831	46/F	12.5	12.6	4	4.2
35	H 41411	36/F	12.3	12	4.4	4.3
36	H 39601	59/M	14.3	15.3	4.5	4.8
37	H 24262	22/M	14.8	14.5	5.4	5.4
38	H 34014	31/F	12.5	12.8	4.6	4.7
39	H 41528	27/F	11.7	12.2	4.2	4.6
40	H 42729	22/M	16.8	17.3	5.7	5.7

BLOOD INVESTIGATION BEFORE TREATMENT														
S.NO	OPD NO	AGE/ SEX	DC%					ESR mm/hr		BLOOD				
			P	L	M	E	B	½ Hr	1 hr	Sug mg/dl		Urea mg/dl	S.Crea mg/dl	S.Uric Acid
										F	PP			
1	H 19492	50/M	64	30	02	04	-	2	6	109	117	31	1.2	5.4
2	H 15645	31/M	50	38	02	10	-	4	10	86	83	19	1	5
3	H 20423	33/M	61	35	-	04	-	4	12	92	118	17	1	5.4
4	H 16032	21/M	63	32	04	-	-	2	4	106	123	16	1	5.4
5	H 19053	51/M	71	24	03	02	-	2	6	105	120	16	1.2	5.9
6	H 18411	32/M	57	39	03	01	-	2	4	97	108	29	1.2	5.8
7	H 13757	34/M	49	42	08	01	-	06	10	84	100	17	1.1	5
8	H 23990	34/M	68	28	04	-	-	2	4	110	120	24	1.2	4.9
9	H 01697	23/M	55	39	06	-	-	4	10	105	128	13	1.2	4.5
10	H 24900	50/M	60	33	07	-	-	5	12	89	125	16	1.1	6
11	H 23888	35/F	58	37	03	02	-	2	10	88	132	22	0.9	5.2
12	H 11568	37/M	52	42	06	-	-	2	6	108	123	28	1	7.5
13	H 18479	29/M	59	37	04	-	-	8	10	105	128	18	1.2	6.3
14	H 05729	52/F	60	36	04	-	-	14	30	106	132	17	0.9	5.1
15	H 25307	26/M	46	45	09	-	-	4	8	101	137	12	1	3.4
16	H 21974	48/F	58	38	04	-	-	12	26	103	125	29	0.8	3.3
17	H 27215	20/M	56	38	06	-	-	2	4	105	106	14	1.1	6.6
18	H 20060	31/M	56	44	04	-	-	2	4	101	103	20	1.2	4.4
19	H 25423	36/F	71	25	04	-	-	6	12	99	121	14	0.8	1.8
20	H 01812	48/M	48	43	09	-	-	2	4	117	125	26	1	1.8

BLOOD INVESTIGATION BEFORE TREATMENT														
S.NO	OPD NO	AGE/ SEX	DC%					ESR Mm/hr		BLOOD				
			P	L	M	E	B	½ Hr	1 hr	Sug mg/dl		Urea mg/dl	S.Crea mg/dl	S.Uric Acid
										F	PP			
21	H 13275	49/F	51	42	07	-	-	10	20	75	107	14	0.8	3.1
22	H 27409	26/M	65	30	05	-	-	2	4	93	99	32	1.2	4.5
23	H 23014	24/M	52	40	08	-	-	4	12	72	110	21	0.8	5.1
24	H 27386	37/M	50	43	07	-	-	2	4	107	123	29	1	4.4
25	H 21784	60/F	68	24	08	-	-	4	12	95	128	20	0.9	4.6
26	H 25573	38/M	59	37	04	-	-	2	6	91	123	14	1.1	5.8
27	H 30917	37/M	50	44	06	-	-	8	12	100	131	18	1.1	4.4
28	H 31520	44/M	57	38	05	-	-	4	10	86	98	19	0.9	4.4
29	H 31567	35/F	60	37	-	03	-	10	12	102	120	18	0.8	4.5
30	H 32015	33/F	54	39	07	-	-	4	8	88	113	19	0.8	2.2
31	H 31212	35/F	64	32	04	-	-	4	12	93	127	17	0.9	3.6
32	H 33137	30/F	59	35	06	-	-	10	14	85	123	13	0.6	3.1
33	H 34776	31/F	54	40	06	-	-	04	14	99	120	23	0.8	5.1
34	H 29831	46/F	65	31	04	-	-	10	14	89	102	16	0.8	3.8
35	H 41411	36/F	52	42	06	-	-	10	22	110	120	11	0.9	2.2
36	H 39601	59/M	73	12	02	13	-	04	12	75	128	16	0.9	3.9
37	H 24262	22/M	42	52	06	-	-	2	4	100	124	16	0.9	4.8
38	H 34014	31/F	51	44	05	-	-	10	12	100	107	26	0.9	3.2
39	H 41528	27/F	54	42	04	-	-	2	4	88	119	16	0.8	2.6
40	H 42729	22/M	58	37	07	-	-	4	8	106	127	23	1.2	5.6

BLOOD INVESTIGATION AFTER TREATMENT															
S.NO	OPD NO	AGE/ SEX	DC%					ESR mm/hr		BLOOD					
			P	L	M	E	B	½ Hr	1 hr	Sug mg/dl		Urea mg/dl	S.Crea mg/dl	S.Uric Acid	
										F	PP				
1	H 19492	50/M	68	27	05	-	-	6	12	88	104	26	1.1	5.4	
2	H 15645	31/M	52	39	09	-	-	4	8	86	93	07	1	4.2	
3	H 20423	33/M	46	48	06	-	-	4	8	84	113	14	1.1	4.5	
4	H 16032	21/M	65	29	06	-	-	6	12	100	105	24	1.1	5.2	
5	H 19053	51/M	63	31	06	-	-	2	4	82	95	19	1.2	6.2	
6	H 18411	32/M	56	40	04	-	-	8	16	95	96	34	1.2	6.1	
7	H 13757	34/M	52	40	08	-	-	5	10	83	102	19	1	5.3	
8	H 23990	34/M	66	30	04	-	-	3	6	105	125	20	1	5	
9	H 01697	23/M	51	43	06	-	-	16	30	92	124	15	0.9	4.6	
10	H 24900	50/M	60	33	07	-	-	5	12	89	125	16	1.1	6	
11	H 23888	35/F	50	44	06	-	-	2	4	106	128	24	0.9	6.5	
12	H 11568	37/M	59	37	04	-	-	6	10	103	130	19	1.1	6.2	
13	H 18479	29/M	54	42	06	-	-	4	8	107	125	15	0.7	5.9	
14	H 05729	52/F	61	34	05	-	-	12	16	87	135	19	0.8	5.1	
15	H 25307	26/M	48	48	01	10	-	2	4	92	103	19	0.9	3.8	
16	H 21974	48/F	65	31	04	-	-	2	14	97	105	32	0.7	3.6	
17	H 27215	20/M	64	30	06	-	-	2	4	85	89	12	0.9	5.7	
18	H 20060	31/M	54	42	04	-	-	3	6	86	104	14	0.9	5	
19	H 25423	36/F	64	31	05	-	-	2	4	95	101	15	0.7	2.3	
20	H 01812	48/M	41	47	03	09	-	2	4	90	118	24	0.9	2.9	

BLOOD INVESTIGATION AFTER TREATMENT															
S.NO	OPD NO	AGE/ SEX	DC%					ESR Mm/hr		BLOOD					
			P	L	M	E	B	½ Hr	1 hr	Sug mg/dl		Urea mg/dl	S.Crea mg/dl	S.Uric Acid	
										F	PP				
21	H 13275	49/F	53	43	06	-	-	9	18	85	105	16	0.7	3	
22	H 27409	26/M	51	45	04	-	-	8	12	98	101	25	0.9	5.2	
23	H 23014	24/M	54	43	03	-	-	2	4	94	81	14	1.1	5.3	
24	H 27386	37/M	50	42	08	-	-	16	32	98	127	28	0.9	4.8	
25	H 21784	60/F	64	24	09	03	-	10	22	79	105	35	0.9	4.7	
26	H 25573	38/M	60	36	04	-	-	2	6	91	123	14	1.1	5.8	
27	H 30917	37/M	52	42	06	-	-	2	4	79	80	18	1.1	4.2	
28	H 31520	44/M	58	38	04	-	-	2	4	101	126	32	1.1	6.5	
29	H 31567	35/F	62	35	-	03	-	6	12	95	128	20	0.8	4.5	
30	H 32015	33/F	61	36	-	03	-	2	4	94	107	31	0.9	3.8	
31	H 31212	35/F	61	35	04	-	-	6	12	90	135	11	0.8	3.1	
32	H 33137	30/F	62	34	04	-	-	4	10	96	120	12	0.7	3.2	
33	H 34776	31/F	49	45	06	-	-	10	20	93	106	21	0.8	4.6	
34	H 29831	46/F	67	28	05	-	-	4	8	95	105	18	0.8	3.6	
35	H 41411	36/F	64	34	-	02	-	16	32	97	120	13	0.7	2.3	
36	H 39601	59/M	75	10	02	13	-	5	10	87	119	18	0.9	3.8	
37	H 24262	22/M	40	55	05	-	-	2	10	95	98	14	0.9	4.5	
38	H 34014	31/F	55	41	04	-	-	10	20	104	129	20	1	4	
39	H 41528	27/F	57	38	05	05	-	3	6	87	100	21	0.8	3.8	
40	H 42729	22/M	59	34	07	-	-	2	4	89	110	27	1.2	6.3	

BLOOD INVESTIGATION BEFORE TREATMENT																		
S.NO	OPD NO	AGE/ SEX	T.Bilirubin mg/dl	D.Bilirubin Mg/dl	ID.Bilirubin Mg/dl	SGOT IU/L	SGPT IU/L	S.ALP IU/L	T.Protein gm/dl	S.Albumin mg/dl	S.Globulin gm/dl	S.Calcium gm/dl	S.phos mg/dl	T.Cholestrol mg/dl	HDL mg/dl	LDL mg/dl	VLDL mg/dl	TGL mg/dl
1	H 19492	50/M	0.6	0.3	0.3	22	27	101	7.8	4.6	3.2	9.4	6.4	162	53	98	14	71
2	H 15645	31/M	0.7	0.2	0.5	18	13	33	7.5	4.8	2.7	8.7	6.1	186	48	111	23	113
3	H 20423	33/M	0.7	0.2	0.5	35	71	92	7.6	4.9	2.7	9.2	5.2	149	41	88	18	91
4	H 16032	21/M	0.6	0.2	0.4	26	41	71	8.2	5	3.2	10.2	5.5	182	59	112	21	104
5	H 19053	51/M	0.8	0.3	0.5	23	25	71	7.4	4.5	3	8.6	6.9	205	49	119	19	97
6	H 18411	32/M	0.5	0.2	0.3	28	23	66	8.2	5	3.2	8.7	5	203	58	112	18	90
7	H 13757	34/M	1	0.5	0.5	18	09	49	7.4	4.5	2.9	9.3	6.2	126	49	70	08	41
8	H 23990	34/M	0.7	0.3	0.4	22	27	90	7.9	5.1	2.8	10.2	6.1	146	47	77	15	77
9	H 01697	23/M	1	0.4	0.6	27	30	85	7.8	4.8	3	9.3	7.2	168	41	95	19	96
10	H 24900	50/M	0.5	0.2	0.3	31	45	83	7.8	4.7	3.1	8.4	5.3	206	65	112	25	125
11	H 23888	35/F	0.4	0.1	0.3	37	30	61	8	4.5	3.5	9.5	6.2	204	57	120	27	135
12	H 11568	37/M	0.6	0.2	0.4	15	12	95	7.8	4.9	2.9	8.3	5.7	171	48	91	23	114
13	H 18479	29/M	0.6	0.2	0.4	22	31	123	7.5	4.6	2.9	9.8	5.4	201	48	103	47	133
14	H 05729	52/F	0.8	0.4	0.4	20	06	88	8.3	4.6	3.7	9.5	5.3	209	84	109	17	84
15	H 25307	26/M	0.9	0.6	0.3	18	02	66	8.1	5.1	3	8.6	2	157	59	8 4	12	58
16	H 21974	48/F	0.5	0.2	0.3	18	27	66	8	4.6	3.4	9	6.3	174	58	94	17	84
17	H 27215	20/M	1.1	0.5	0.6	20	26	77	8.5	5	3.5	8.4	6.9	110	47	56	16	81
18	H 20060	31/M	0.7	0.3	0.4	40	35	47	7.8	4.9	2.9	8.8	2.5	190	40	103	19	94
19	H 25423	36/F	0.7	0.4	0.3	32	41	62	7.5	4.6	2.9	8.2	5.3	146	69	77	09	47
20	H 01812	48/M	0.8	0.6	0.2	23	17	56	6.9	4.2	2.7	8.1	5.5	207	54	122	19	93

BLOOD INVESTIGATION BEFORE TREATMENT																		
S.NO	OPD NO	AGE/ SEX	T.Bilirubin mg/dl	D.Bilirubin Mg/dl	ID.Bilirubin Mg/dl	SGOT IU/L	SGPT IU/L	S.ALP IU/L	T.Protein gm/dl	S.Albumin mg/dl	S.Globulin gm/dl	S.Calcium gm/dl	S.phos mg/dl	T.Cholestrol mg/dl	HDL mg/dl	LDL mg/dl	VLDL mg/dl	TGL mg/dl
21	H 13275	49/F	0.4	0.1	0.3	28	32	87	8.4	5.1	3.3	10.6	4.3	209	55	102	36	131
22	H 27409	26/M	1	0.5	0.5	15	18	66	7.6	4.7	2.9	8.2	6.3	133	49	74	11	57
23	H 23014	24/M	0.8	0.4	0.4	17	29	64	8.3	4.9	3.4	9.2	3.7	158	59	85	11	56
24	H 27386	37/M	0.7	0.3	0.4	22	34	63	7.4	4.4	3	8.5	6.5	199	51	121	22	112
25	H 21784	60/F	0.4	0.1	0.3	15	13	96	7.7	4.5	3.2	8.5	4.2	218	59	123	18	91
26	H 25573	38/M	0.7	0.2	0.5	22	25	43	7.6	4.7	2.9	8.9	6	183	44	108	32	213
27	H 30917	37/M	0.3	0.1	0.2	20	21	83	7.4	4.5	3.9	7.7	3.6	189	50	100	17	84
28	H 31520	44/M	1.1	0.4	0.7	18	37	42	7.1	4.4	2.7	8.3	2.7	130	37	112	49	246
29	H 31567	35/F	0.5	0.3	0.2	24	25	83	7.7	4.4	3.3	9	3.0	213	46	105	36	129
30	H 32015	33/F	0.9	0.4	0.5	20	14	44	6.9	4.2	2.7	8.5	3.3	157	47	75	12	59
31	H 31212	35/F	0.5	0.3	0.2	20	18	71	7.7	4.7	3	7.9	2.8	191	53	94	21	106
32	H 33137	30/F	0.3	0.1	0.2	20	15	76	7.4	4.3	3.1	7.7	3	139	56	98	23	114
33	H 34776	31/F	0.7	0.2	0.5	15	14	59	8.1	4.6	3.5	9.1	4.2	188	50	89	27	134
34	H 29831	46/F	0.6	0.2	0.4	11	18	66	7.3	3.9	3.4	7.3	3.2	173	59	118	23	115
35	H 41411	36/F	0.4	0.2	0. 2	20	14	70	7.3	4.3	3	9.5	3.5	156	68	87	16	81
36	H 39601	59/M	0.8	0.4	0.4	21	07	84	8.4	3.6	4.8	8.7	2.9	140	84	74	11	56
37	H 24262	22/M	0.5	0.2	0.3	27	31	61	7.7	4.6	3.1	8.3	3.4	134	51	81	14	68
38	H 34014	31/F	0.4	0.2	0.2	15	11	49	7.4	4.5	2.9	8.8	3.4	142	55	83	12	62
39	H 41528	27/F	0.4	0.2	0.2	12	12	57	7.4	4.4	3	10.1	3.6	173	53	100	11	57
40	H 42729	22/M	1	0.5	0.5	17	15	81	7.8	4.5	3.3	9.4	2.4	143	59	120	17	83

BLOOD INVESTIGATION AFTER TREATMENT																		
S.NO	OPD NO	AGE/ SEX	T.Bili rubin mg/dl	D.Bili rubin Mg/dl	ID.Bili rubin Mg/dl	SG OT IU/L	SG PT IU/L	S.ALP IU/L	T.Pro tein gm/dl	S.Alb umin mg/dl	S.Glo bulin gm/dl	S.Cal cium gm/dl	S.phos mg/dl	T.Cho lestrol mg/dl	HDL mg/dl	LDL mg/dl	VLDL mg/dl	TGL mg/dl
1	H 19492	50/M	0.5	0.2	0.3	27	34	98	7.7	4.5	3.2	9.5	2.7	146	41	104	21	104
2	H 15645	31/M	0.8	0.3	0.5	19	17	61	7.6	4.7	2.8	8.7	2.8	166	50	94	20	100
3	H 20423	33/M	0.5	0.2	0.3	34	41	72	7.5	4.7	2.8	8.9	2.9	167	42	83	33	164
4	H 16032	21/M	0.7	0.2	0.5	26	26	68	8	5	3	9	2.7	179	52	100	16	81
5	H 19053	51/M	0.8	0.3	0.5	16	15	63	7.1	4.4	2.7	8.3	2.7	199	46	115	19	96
6	H 18411	32/M	0.5	0.2	0.3	28	23	66	8.2	5	3.2	8.7	4.2	205	58	125	23	117
7	H 13757	34/M	0.7	0.3	0.4	32	15	62	7.9	5	2.9	8.7	5	150	49	112	26	106
8	H 23990	34/M	0.8	0.3	0.5	28	20	59	7.4	4.3	2.1	8.4	2.8	153	47	114	15	103
9	H 01697	23/M	0.6	0.4	0.2	22	36	58	7.2	4.1	2.1	8.6	2.6	172	49	102	25	153
10	H 24900	50/M	1	0.4	0.6	25	27	72	7.2	4.4	2.8	9.1	3.4	128	33	73	13	65
11	H 23888	35/F	0.5	0.2	0.3	33	45	83	7.1	4	3.1	8.5	2.5	167	37	83	15	83
12	H 11568	37/M	0.7	0.3	0.4	17	18	82	7.3	4.1	3.2	9.2	4.7	163	39	88	22	115
13	H 18479	9/M	0.8	0.5	0.3	19	2.9	89	7.3	4.3	3	9.5	4.4	198	43	99	37	124
14	H 05729	52/F	1.1	0.4	0.7	18	11	69	8.1	4.4	3.7	7.6	3.7	221	62	110	21	106
15	H 25307	6/M	0.8	0.4	0.4	17	18	68	7.4	4.8	2.6	8.4	2.8	133	46	96	08	42
16	H 21974	48/F	0.6	0.3	0.3	13	16	69	7.5	4.6	2.9	8.3	3.9	169	55	92	24	121
17	H 27215	20/M	1.2	0.6	0.6	17	11	62	8	4.8	3.2	10.1	6.4	95	42	49	07	34
18	H 20060	31/M	0.6	0.3	0.3	35	56	57	8.2	5.2	3	9	2.3	180	30	97	17	98
19	H 25423	36/F	0.6	0.3	0.3	32	42	81	7.1	4.3	2.8	8.9	5	146	63	81	23	116
20	H 01812	8/M	0.9	0.2	0.7	29	19	69	6.6	4.3	2.3	6.8	4.6	180	46	104	26	129

BLOOD INVESTIGATION AFTER TREATMENT																		
S.NO	OPD NO	AGE/ SEX	T.Bili rubin mg/dl	D.Bili rubin Mg/dl	ID.Bili rubin Mg/dl	SG OT IU/L	SG PT IU/L	S.ALP IU/L	T.Pro tein gm/dl	S.Alb umin mg/dl	S.Glo bulin gm/dl	S.Cal cium gm/dl	S.phos mg/dl	T.Cho lestrol mg/dl	HDL mg/dl	LDL mg/dl	VLDL mg/dl	TGL mg/dl
21	H 13275	49/F	0.5	0.2	0.3	23	32	84	8.4	4.6	3.8	10.3	3.3	202	53	111	32	123
22	H 27409	26/M	1	0.5	0.5	29	23	70	6.8	4.6	2.2	8	5.3	121	40	68	23	112
23	H 23014	24/M	1.2	0.6	0.6	25	21	65	7.2	4.6	2.7	9.1	4.4	148	52	80	23	118
24	H 27386	37/M	0.9	0.4	0.5	21	23	50	7.4	4.5	2.9	8.4	3.7	181	50	105	24	121
25	H 21784	60/F	0.4	0.1	0.3	15	09	79	7.1	4.1	2.9	7.7	5	191	59	96	13	66
26	H 25573	38/M	0.8	0.5	0.3	20	28	56	7.3	4.2	3.1	9	5.2	179	41	102	23	213
27	H 30917	37/M	0.3	0.2	0.1	28	34	79	6.8	4.4	2.4	6.8	5	179	49	108	28	139
28	H 31520	44/M	1	0.6	0.4	17	32	34	6.7	4.5	2.2	7.9	4.1	120	36	69	15	76
29	H 31567	35/F	0.4	0.2	0.2	21	23	80	8	4.5	3.5	9.1	3.3	209	43	125	35	154
30	H 32015	33/F	0.9	0.4	0.5	22	19	37	6.8	4.2	2.5	7.8	3.5	170	56	56	88	131
31	H 31212	35/F	0.3	0.0	0.3	15	12	68	6.9	4.6	2.3	8.8	1.5	158	44	94	29	144
32	H 33137	30/F	0.4	0.3	0.1	22	13	73	7.2	4	3.2	7.8	3.2	128	49	101	22	109
33	H 34776	31/F	0.4	0.1	0.3	18	08	60	7.2	4.2	3	8.8	3.2	183	44	115	25	123
34	H 29831	46/F	0.7	0.4	0.3	13	23	63	7.2	4	3.2	7.4	3.2	178	56	103	22	124
35	H 41411	36/F	0.5	0.2	0.3	18	14	87	7.6	4.2	3.4	8.2	4	161	57	90	24	119
36	H 39601	59/M	0.7	0.4	0.3	40	16	110	7.7	3.4	4.3	8	5	162	60	80	30	152
37	H 24262	22/M	0.4	0.2	0.2	25	18	60	7.1	4.5	2.6	9.5	6	148	44	86	26	130
38	H 34014	31/F	0.5	0.2	0.3	20	10	57	7.1	4.4	2.7	7.4	5	162	46	96	30	151
39	H 41528	27/F	0.3	0.1	0.2	17	14	78	6.7	4.4	2.3	8.4	4.6	191	54	11	20	102
40	H 42729	22/M	0.8	0.5	0.3	36	25	77	7.8	4.2	3.7	10.1	4.4	139	52	71	28	141

URINE ANALYSIS BEFORE AND AFTER TREATMENT																
S.NO	OPD NO	AGE/ SEX	BEFORE TREATMENT							AFTER TREATMENT						
			Alb	Sug	Deposit		BS	BP	Uro	Alb	Sug	Deposit		BS	BP	Uro
					Pus Cell	Epi cell						Pus cell	Epi cell			
1	H 19492	50/M	Nil	Nil	2-4	3-5	Nil	Nil	N	Nil	Nil	1-2	1-2	Nil	Nil	N
2	H 15645	31/M	Nil	Nil	1-3	1-3	Nil	Nil	N	Nil	Nil	2-3	2-4	Nil	Nil	N
3	H 20423	33/M	Nil	Nil	4-6	3-5	Nil	Nil	N	Nil	Nil	4-5	2-3	Nil	Nil	N
4	H 16032	21/M	Nil	Nil	2-4	2-4	Nil	Nil	N	Nil	Nil	2-3	1-2	Nil	Nil	N
5	H 19053	51/M	Nil	Nil	1-3	1-2	Nil	Nil	N	Nil	Nil	2-3	1-3	Nil	Nil	N
6	H 18411	32/M	Nil	Nil	1-3	3-4	Nil	Nil	N	Nil	Nil	1-3	1-2	Nil	Nil	N
7	H 13757	34/M	Nil	Nil	1-3	1-2	Nil	Nil	N	Nil	Nil	1-2	1-2	Nil	Nil	N
8	H 23990	34/M	Nil	Nil	2-4	2-4	Nil	Nil	N	Nil	Nil	3-4	2-3	Nil	Nil	N
9	H 01697	23/M	Nil	Nil	2-3	2-3	Nil	Nil	N	Nil	Nil	1-2	1-2	Nil	Nil	N
10	H 24900	50/M	Nil	Nil	2-4	2-4	Nil	Nil	N	Nil	Nil	2-3	1-3	Nil	Nil	N
11	H 23888	35/F	Nil	Nil	1-2	2-4	Nil	Nil	N	Nil	Nil	1-3	2-3	Nil	Nil	N
12	H 11568	37/M	Nil	Nil	6-8	4-6	Nil	Nil	N	Nil	Nil	3-6	3-4	Nil	Nil	N
13	H 18479	29/M	Nil	Nil	2-3	2-3	Nil	Nil	N	Nil	Nil	3-4	3-4	Nil	Nil	N
14	H 05729	52/F	Nil	Nil	1-2	1-2	Nil	Nil	N	Nil	Nil	1-3	1-2	Nil	Nil	N
15	H 25307	26/M	Nil	Nil	3-5	1-2	Nil	Nil	N	Nil	Nil	2-4	1-3	Nil	Nil	N
16	H 21974	48/F	Nil	Nil	4-6	3-5	Nil	Nil	N	Nil	Nil	2-4	2-4	Nil	Nil	N
17	H 27215	20/M	Nil	Nil	2-3	1-2	Nil	Nil	N	Nil	Nil	1-2	4-5	Nil	Nil	N
18	H 20060	31/M	Nil	Nil	1-3	1-3	Nil	Nil	N	Nil	Nil	1-2	1-2	Nil	Nil	N
19	H 25423	36/F	Nil	Nil	2-4	3-5	Nil	Nil	N	Nil	Nil	2-4	2-4	Nil	Nil	N
20	H 01812	48/M	Nil	Nil	1-2	1-3	Nil	Nil	N	Nil	Nil	10-12	6-8	Nil	Nil	N

URINE ANALYSIS BEFORE AND AFTER TREATMENT																
S.NO	OPD NO	AGE/ SEX	BEFORE TREATMENT							AFTER TREATMENT						
			Alb	Sug	Deposit		BS	BP	Uro	Alb	Sug	Deposit		BS	BP	Uro
					Pus Cell	Epi cell						Pus Cell	Epi cell			
21	H 13275	49/F	Nil	Nil	2-4	1-3	Nil	Nil	N	Nil	Nil	1-2	2-3	Nil	Nil	N
22	H 27409	26/M	Nil	Nil	2-4	1-2	Nil	Nil	N	Nil	Nil	1-2	1-2	Nil	Nil	N
23	H 23014	24/M	Nil	Nil	2-4	3-5	Nil	Nil	N	Nil	Nil	2-3	2-4	Nil	Nil	N
24	H 27386	37/M	Nil	Nil	3-5	2-4	Nil	Nil	N	Nil	Nil	1-2	4-5	Nil	Nil	N
25	H 21784	60/F	Nil	Nil	2-4	2-4	Nil	Nil	N	Nil	Nil	2-3	2-3	Nil	Nil	N
26	H 25573	38/M	Nil	Nil	4-6	3-5	Nil	Nil	N	Nil	Nil	2-3	3-4	Nil	Nil	N
27	H 30917	37/M	Nil	Nil	2-3	2-3	Nil	Nil	N	Nil	Nil	10-12	6-8	Nil	Nil	N
28	H 31520	44/M	Nil	Nil	2-4	2-4	Nil	Nil	N	Nil	Nil	2-3	1-2	Nil	Nil	N
29	H 31567	35/F	Nil	Nil	1-2	1-2	Nil	Nil	N	Nil	Nil	1-2	1-2	Nil	Nil	N
30	H 32015	33/F	Nil	Nil	2-3	3-4	Nil	Nil	N	Nil	Nil	2-3	3-4	Nil	Nil	N
31	H 31212	35/F	Nil	Nil	1-3	1-3	Nil	Nil	N	Nil	Nil	1-2	2-4	Nil	Nil	N
32	H 33137	30/F	Nil	Nil	3-5	3-5	Nil	Nil	N	Nil	Nil	2-4	2-4	Nil	Nil	N
33	H 34776	31/F	Nil	Nil	3-5	10-12	Nil	Nil	N	Nil	Nil	6-8	3-5	Nil	Nil	N
34	H 29831	46/F	Nil	Nil	3-5	2-3	Nil	Nil	N	Nil	Nil	2-3	2-3	Nil	Nil	N
35	H 41411	36/F	Nil	Nil	1-2	1-2	Nil	Nil	N	Nil	Nil	1-2	2-3	Nil	Nil	N
36	H 39601	59/M	Nil	Nil	4-6	2-4	Nil	Nil	N	Nil	Nil	2-4	2-4	Nil	Nil	N
37	H 24262	22/M	Nil	Nil	1-3	1-2	Nil	Nil	N	Nil	Nil	1-3	1-2	Nil	Nil	N
38	H 34014	31/F	Nil	Nil	6-8	6-8	Nil	Nil	N	Nil	Nil	6-8	6-8	Nil	Nil	N
39	H 41528	27/F	Nil	Nil	2-3	2-4	Nil	Nil	N	Nil	Nil	2-4	2-4	Nil	Nil	N
40	H 42729	22/M	Nil	Nil	3-5	2-4	Nil	Nil	N	Nil	Nil	6-8	3-5	Nil	Nil	N

USG ABDOMEN RESULTS BEFORE AND AFTER TREATMENT									
S. NO	OPD NO	AGE/SEX			SIZE OF THE KIDNEY	SITE OF THE CALCULUS	NO OF CALCULUS	SIZE OF THE CALCULUS	HYDROURETERO NEPHROSIS
1	H 19492	50/M	RT KIDNEY	BT	10.9×4.5cm	Lower pole	1	5.1mm	-
				AT	9.5×3.8cm	Lower pole	1	4.1mm	-
			LT KIDNEY	BT	10.5×5.3cm	Mid pole calyx Lower pole calyx	2	4.4mm, 3.7mm	-
				AT	9.8×4.2cm	Mid mid calyx	1	3.1mm	-
2	H 15645	31/M	RT KIDNEY	BT	9×4.3cm	-	-	-	-
				AT	9×4.1cm	-	-	-	-
			LT KIDNEY	BT	8.5×4.4cm	Pelvis, Lower pole	2	1.8cm, 6.8mm	+
				AT	9×4cm	Pelvis, Lower calyx	2	1.7cm, 7mm	+
3	H 20423	33/M	RT KIDNEY	BT	9.8×4.2cm	Lower pole	1	5.3mm	-
				AT	10.1×4.8cm	Lower pole	1	3.5mm	-
			LT KIDNEY	BT	10.6×5.1cm	Mid pole	1	4.1mm	-
				AT	10.5×6.4cm	-	-	No e/o Calculi	-
4	H 16032	21/M	RT KIDNEY	BT	9.9×4.3cm	Lower pole	1	4mm	-
				AT	9.4×4.4cm	-	-	Normal Study	-
			LT KIDNEY	BT	9×4.2cm	-	-	-	-
				AT	9.2×4.3cm	-	-	-	-
5	H 19053	51/M	RT KIDNEY	BT	10.4×6cm	Lower pole	1	4mm	-
				AT	10×6.2cm	-	-	Normal study	-
			LT KIDNEY	BT	11×5.9.cm	Left UVJ	1	5.8mm	+
				AT	11.1×5.6cm	-	-	Normal study	-
6	H 18411	32/M	RT KIDNEY	BT	10.9×4.3cm	Inter pole	1	4mm	-
				AT	11×4cm	-	-	No e/o calculi	-
			LT KIDNEY	BT	11×5.5cm	Inter pole	1	7mm	-
				AT	11.2×5.3cm	Inter pole	1	3mm	-
7	H 13757	34/M	RT KIDNEY	BT	10×6.2cm	Lower calyx	1	9mm	-
				AT	10.7×4.3cm	Lower calyx	1	7mm	-
			LT KIDNEY	BT	10.3×4.7cm	-	-	-	-
				AT	9.8×4.9cm	-	-	-	-

8	H 23990	34/M	RT KIDNEY	BT	11.1×4.2cm	Mid calyx	1	6mm	-
				AT	11.3×4cm	Mid calyx	1	4mm	-
			LT KIDNEY	BT	10×4.3mm	-	-	-	-
				AT	10.3×4.1cm	-	-	-	-
9	H 01697	23/M	RT KIDNEY	BT	11×4.6cm	Mid calyx	1	6mm	-
				AT	11.3×4.3cm	Mid calyx	1	3mm	-
			LT KIDNEY	BT	11.2×6.5cm	Mid calyx	2	3mm,4mm	-
				AT	11×6.6cm	Mid calyx	1	3mm	-
10	H 24900	50/M	RT KIDNEY	BT	11.4×6cm	Lower calyx, lower mid ureter	3	5.2mm, 5.7mm, 14.4mm	+
				AT	11.1×6.6cm	Lower calyx, lower mid ureter	3	6mm, 5mm, 12.2mm	+
			LT KIDNEY	BT	10.7×5.9cm	Mid calyx, Lower calyx	3	5.1mm, 4.1mm,,5.1mm	-
				AT	10.7×5.4cm	Mid calyx, Lower calyx	3	5mm, 4.2mm	-
11	H 23888	35/F	RT KIDNEY	BT	11.2×4.5cm	Mid calyx	1	6.1mm	-
				AT	10.6×4.9cm	-	-	Normal study	-
			LT KIDNEY	BT	11.8×6.1cm	-	-	-	-
				AT	11.2×6.3cm	-	-	-	-
12	H 11568	37/M	RT KIDNEY	BT	8.8×3.7cm	Upper calyx	1	6mm	-
				AT	9.4×4cm	Upper calyx	1	5mm	-
			LT KIDNEY	BT	9.3×4.8cm	Upper calyx, Mid calyx	2	4mm, 6mm	-
				AT	9.8×4.3cm	Upper calyx, Mid calyx	2	4mm, 5mm	-
13	H 18479	29/M	RT KIDNEY	BT	10.1×5.6cm	Upper calyx	1	6.1cm	-
				AT	11×4.8cm	Upper calyx	1	6.1cm	-
			LT KIDNEY	BT	10.7×4.9cm	-	-	-	-
				AT	10.3×5cm	-	-	-	-
14	H 05729	52/F	RT KIDNEY	BT	11.2×5.9cm	Lower ureter	1	7.7mm	+
				AT	11.8×5.9cm	-	-	Normal study	-
			LT KIDNEY	BT	10×5cm	Inter pole	1	4.7mm	-
				AT	10×4.9cm	Inter pole	1	3mm	-
15	H 25307	26/M	RT KIDNEY	BT	11.3×6.7cm	Upper pole calyx	1	5mm	-
				AT	10.6×4.6cm	-	-	Normal study	-
			LT KIDNEY	BT	11.1×5.4cm	-	-	Microlith	-
				AT	10.9×4.7cm	-	-	Normal study	-
16	H 21974	48/F	RT KIDNEY	BT	9.9×4.7cm	-	-	-	-
				AT	9×5cm	-	-	-	-
			LT KIDNEY	BT	10.3×5.1cm	Lower pole	1	7.5mm	-
				AT	10.4×4.9	Lower pole	1	6 mm	-

17	H 27215	20/M	RT KIDNEY	BT	10.5×4.7cm	Mid and lower pole	2	4.2mm,4.9mm	+
				AT	10.7×4.6cm	-	-	Microlith	-
			LT KIDNEY	BT	10.7×4.5cm	-	-	-	-
				AT	10.9×4.3cm	-	-	-	-
18	H 20060	31/M	RT KIDNEY	BT	10×5cm	Mid calyx, Lower calyx	2	6.6mm,7.4mm	+
				AT	9.5×5.3cm	Mid calyx, Lower calyx	2	6.6mm,7.4mm	+
			LT KIDNEY	BT	10.6×5.3cm	-	-	-	-
				AT	10.7×4.8cm	-	-	-	-
19	H 25423	36/F	RT KIDNEY	BT	10.3×5.3cm	Upper calyx	1	6×5mm	-
				AT	10.3×4cm	Upper calyx	1	3×4mm	-
			LT KIDNEY	BT	10.6×5.3cm	Upper calyx Mid calyx	2	6×5mm, 4×4mm	-
				AT	10.2×5cm	Upper calyx	1	4×4mm	-
20	H 01812	48/M	RT KIDNEY	BT	8.9×3.8cm	Mid calyx	2	8mm,4.4mm	-
				AT	9.8×3.8cm	Mid calyx	1	4mm	-
			LT KIDNEY	BT	8.9×3.8cm	-	-	-	-
				AT	8.6×5.1cm	-	-	-	-
21	H 13275	49/F	RT KIDNEY	BT	10×4.3cm	-	-	-	-
				AT	10×4.7cm	-	-	-	-
			LT KIDNEY	BT	10×4.8cm	Lower calyx	1	5.9mm	-
				AT	10.2×4.6cm	-	-	Normal study	-
22	H 27409	26/M	RT KIDNEY	BT	9.5×4.8cm	mid ureter	1	4.5mm	+
				AT	9.3×4.5cm	-	-	Normal study	-
			LT KIDNEY	BT	9.7×5.6cm	-	-	-	-
				AT	9.9×5.3cm	-	-	-	-
23	H 23014	24/M	RT KIDNEY	BT	10×4.6cm	Lower pole	2	4.5mm, 5.7mm	-
				AT	10.1×4.5cm	Lower pole	2	4mm, 5.1mm	-
			LT KIDNEY	BT	9.3×4.4cm	Mid pole	1	5.3mm	-
				AT	9.2×5cm	Mid pole	1	4mm	-
24	H 27386	37/M	RT KIDNEY	BT	10.1×5.6cm	Upper pole	1	1cm	-
				AT	10.5×5.8cm	Upper pole	1	7mm	-
			LT KIDNEY	BT	10.7×4.9cm	Mid pole	1	8.1mm	-
				AT	10.2×4.5cm	-	-	Normal study	-
25	H 21784	60/F	RT KIDNEY	BT	8.7×4cm	RT UVJ	1	7mm	+
				AT	8.7×4.3cm	-	-	No e/o calculi	-
			LT KIDNEY	BT	8.7×4.3cm	-	-	-	-
				AT	8.6×4.6cm	-	-	-	-

26	H 25573	38/M	RT KIDNEY	BT	11×4.5cm	Mid pole	1	4mm	-
				AT	11.1×5.2cm	-	-	Normal study	-
			LT KIDNEY	BT	10.8×5.5cm	Mid pole	1	5mm	-
				AT	10.1×4.7cm	-	-	Normal study	-
27	H 30917	37/M	RT KIDNEY	BT	9.9×5.1cm	Lower pole	1	6mm	-
				AT	10.7×5.3cm	Lower pole	1	4mm	-
			LT KIDNEY	BT	11.4×5.2cm	Upper pole, Lower pole	2	3.8mm, 1.1cm	-
				AT	10.9×4.9cm	Lower pole	1	8mm	-
28	H 31520	44/M	RT KIDNEY	BT	10.4×4.3cm	-	-	-	-
				AT	10.7×4cm	-	-	-	-
			LT KIDNEY	BT	11.2×5.8cm	LT UVJ	1	6mm	+
				AT	10.7×5.7cm	-	-	Normal study	-
29	H 31567	35/F	RT KIDNEY	BT	10.6×4.8cm	Mid pole	1	4.4mm	-
				AT	12.7×4.2cm	-	-	Normal study	-
			LT KIDNEY	BT	10.2×4.8cm	-	-	-	-
				AT	11.9×4.7cm	-	-	-	-
30	H 32015	33/F	RT KIDNEY	BT	9.5×4.4cm	Lower pole	1	4.9mm	-
				AT	9.2×4.2cm	Lower pole	1	3.4mm	-
			LT KIDNEY	BT	10×4.2cm	-	-	-	-
				AT	9.5×4.7cm	-	-	-	-
31	H 33137	30/F	RT KIDNEY	BT	9.9×5.1cm	Mid calyx	1	5mm	-
				AT	10.4×3.6cm	Mid calyx	1	4.7mm	-
			LT KIDNEY	BT	9.9×4.9cm	ureter	1	7mm	-
				AT	10×4.3cm	ureter	1	4.4mm	-
32	H 34776	31/F	RT KIDNEY	BT	9×4.4cm	Upper pole, Lower pole	2	5.1mm, 8.3mm	-
				AT	9.2×4.2cm	Upper pole, Lower pole	2	5.2mm, 8.3mm	-
			LT KIDNEY	BT	10.8×4.5cm	-	-	-	-
				AT	10.9×4.5cm	-	-	-	-
33	H 34776	31/F	RT KIDNEY	BT	8.4×4.6cm	Middle calyx	1	6mm	-
				AT	9.2×4cm	Middle calyx	1	6mm	-
			LT KIDNEY	BT	10.8×4.5cm	Middle calyx	1	7.8mm	-
				AT	10.9×4.5cm	Middle calyx	1	7.7mm	-
34	H 29831	46/F	RT KIDNEY	BT	10×4.7cm	RT UVJ	1	8mm	+
				AT	10.1×4.6cm	-	-	Normal study	-
			LT KIDNEY	BT	11×5.7cm	-	-	-	-
				AT	11.3×5.2cm	-	-	-	-

35	H 41411	36/F	RT KIDNEY	BT	10.7×3.7cm	Upper polar calyx	1	4mm	-
				AT	10.4×4cm	-	-	Normal study	-
			LT KIDNEY	BT	11.5×4.8cm	-	-	-	-
				AT	11.2×5cm	-	-	-	-
36	H 39601	59/M	RT KIDNEY	BT	10.1×3.4cm	Mid pole	1	6mm	-
				AT	10.5×3.2cm	Mid pole	1	5mm	-
			LT KIDNEY	BT	9.2×4.7cm	-	-	-	-
				AT	9.4×4.7cm	-	-	-	-
37	H 24262	22/M	RT KIDNEY	BT	9.4×4.7cm	Mid pole	1	4.2mm	-
				AT	9.2×4.7cm	-	-	Normal study	-
			LT KIDNEY	BT	9.6×5.2cm	-	-	-	-
				AT	9.3×5cm	-	-	-	-
38	H 34014	31/F	RT KIDNEY	BT	9.8×4.3cm	Mid pole calyx	1	3.6mm	-
				AT	10.1×4.1cm	Mid pole	1	Microlith	-
			LT KIDNEY	BT	10.2×4.2cm	Upper pole calyx, Lower pole calyx	2	4.2mm, 4.9mm	-
				AT	9.3×4.9cm	Lower pole	1	3.7mm	-
39	H 41528	27/F	RT KIDNEY	BT	9.2×4.4cm	Upper pole, Lower pole	2	4.1mm, 3.2mm	-
				AT	9.7×4.2cm	Upper pole, Lower pole	2	4.1mm,3.2mm	-
			LT KIDNEY	BT	9.8×.4.5cm	Upper pole, Lower pole	2	5.4mm, 3.6mm	-
				AT	9.2×4cm	Upper pole, Lower pole	2	5.4mm, 3.6mm	-
40	H 42729	22/M	RT KIDNEY	BT	9.5×4.8cm	Mid pole calyx	1	8mm	-
				AT	9.8×4.4cm	Mid pole calyx	1	8mm	-
			LT KIDNEY	BT	10.6×5cm	Lower pole calyx	1	6mm	-
				AT	10.2×4.8cm	Lower pole calyx	1	6mm	-

BT- Before Treatment, AT-After Treatment, RT- Right Kidney, LT- Left Kidney

CLINICAL SYMPTOMS BEFORE AND AFTER TREATMENT																						
S.NO	OPD NO	Age/ Sex	Pain from loin to groin region		Abdominal Pain		Agonizing Pain		Oliguria		Burning micturition		Yellow coloured micturition		Dysuria		Pain in Urethra		Haematuria		Nausea/ vomiting	
			BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	H 19492	50/M	+	-	+	-		-	+	-	+	-	+	-	-	-	-	-	-	-	-	-
2	H 15645	31/M	+	+	+	-	+	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
3	H 20423	33/M	+	-	+	-	-	-	-	-	+	-	+	-	+	-	-	-	-	-	-	-
4	H 16032	21/M	+	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-
5	H 19053	51/M	+	-	_	-	+	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
6	H 18411	32/M	+	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
7	H 13757	34/M	+	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
8	H 23990	34/M	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
9	H 01697	23/M	+	-	+	-		-	+	-	-	-	+	-	-	-	-	-	-	-	-	-
10	H 24900	50/M	+	+	+	-	+	-	-	-	+	-	+	-	-	-	+	-	-	-	+	-
11	H 23888	35/F	+	-	+	-	-	-	-	-	+	-	+	-	+	-	-	-	-	-	-	-
12	H 11568	37/M	+	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
13	H 18479	29/M	+	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
14	H 05729	52/F	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	H 25307	26/M	+	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
16	H 21974	48/F	+	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
17	H 27215	20/M	+	-	+	-	+	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
18	H 20060	31/M	+	-	+	-	-	-	-	-	+	-	+	-	+	-	-	-	-	-	-	-
19	H 25423	36/F	+	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
20	H 01812	48/M	+	-	+	-	+	-	-	-	+	-	+	-	-	-	+	-	-	-	-	-

CLINICAL SYMPTOMS BEFORE AND AFTER TREATMENT																						
S.NO	OP NO	Age/ Sex	Pain from loin to groin Region		Abdominal Pain		Agonizing Pain		Oliguria		Burning micturition		Yellow coloured micturition		Dysuria		Pain in Urethra		Haematuria		Nausea/ Vomiting	
			BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
21	H 13275	49/F	+	-	+	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-
22	H 27409	26/M	+	-	+	-	+	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
23	H 23014	24/M	+	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
24	H 27386	37/M	+	+	-	-	+	-	+	-	+	-	+	-	+	-	-	-	-	-	-	-
25	H 21784	60/F	+	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	+	-	-	-
26	H 25573	38/M	+	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
27	H 30917	37/M	+	-	+	-	+	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-
28	H 31520	44/M	+	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
29	H 31567	35/F	+	-	+	-	-	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-
30	H 32015	33/F	+	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
31	H 31212	35/F	+	-	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
32	H 33137	30/F	+	-	-	-	-	-	-	-	+	-	+	-	+	-	-	-	-	-	-	-
33	H 34776	31/F	+	-	+	-	-	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-
34	H 29831	46/F	+	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
35	H 41411	36/F	+	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
36	H 39601	59/M	+	-	+	-	+	-	-	-	+	-	+	-	+	-	-	-	-	-	+	-
37	H 24262	22/M	+	-	+	-	-	-	+	-	+	-	+	-	-	-	-	-	-	-	-	-
38	H 34014	31/F	+	-	-	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
39	H 41528	27/F	+	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-	-	-	-
40	H 42729	22/M	+	-	+	-	+	-	-	-	+	-	+	-	+	-	-	-	-	-	-	-

DISCUSSION

DISCUSSION

The main aim of the treatment is to evaluate the therapeutic effect of the trial drug Koozhpaanda Chooranam (internal) in the disease azhal kalladaippu.The clinical features of azhal kalladaippu can be correlated with renal calculus in Modern science.As per yugi vathiya chinthamani text, Azhal kalladaippu is charecterised by oliguria,urethral pain which mimics the pain caused by the insertion of iron rod in the urethra,sweating all over the body,anuria,agonizing pain,blood stained calculus stagnated in urethra.

The trial drug was prepared in Gunapadam lab of National Institute of Siddha after the authentication of the raw drugs by the concerned department. The trial drug was prepared by standard operating procedure as mentioned in the protocol.

The biochemical (qualitative) analysis were done at the laboratory of NIS. It revealed the presence of effective minerals. Physico chemical (quantitative) analysis and HPTLC were done at SCRI.

The clinical study was conducted with a well defined protocol and a proper proforma after the approval of the Institutional Ethical Committee (IEC).After the screening of 60 cases reporting at the OPD of department of Maruthuvam, 40 cases were inducted to the trial.Before enrollment to the trial the informed consent was obtained from the patients.

The patient were treated for a period of 48 days with Koozhpaanda Chooranam (internal) at the dose of 1.5g, twice a day with the adjuvant of Hot water.

Clinical assessment was done during each visit in OPD patients (8 days once) and the data were noted in the prescribed proforma.

Laboratory investigation & USG abdomen were done on 0th day and 48th day of the trial for OPD patients. All the patients were put under observation for 2 months follow up period without the trial drug treatment.

THE OBSERVATIONS DISCUSSED BELOW:

Gender Distribution:

The majority affected was male i.e.25 cases (62.5%) and in female it was 15cases (37.5%)

Inference:

Testosterone may cause increased oxalate production in men.

Women have higher urinary citrate concentration.

Kaalam distribution : (according to age)

Among 40 cases, 22 cases (55%) were found to be in pitha kaalam (34-66 yrs of age) and 18 cases(45%) in vatha kaalam (upto 33 yrs)

Inference:

The peak incidence of renal calculi occurs between 20 and 40 years of age.As per the Rathina suruka naadi this period falls in pitha kaalam (34-66 years) of human's life.

Occupational Reference:

Home makers accounts for highest number of occurence i.e 14 cases (35%).

Dietary Habit:

Among the 40 cases, 36 cases (90%) were non-vegetarian and 4 cases (10%) were vegetarian.

Inference:

Animal protein contain oxalates,calcium,phosphate,and other elements often lead to an excess excretion of them in urine.High intake of animal protein causes high urinary oxalate ,low PH ,low urinary citrate and High intake of salt causes hypercalciuria.However ,a reduced calcium diet can increase the risk of further stone formation.

Marital status

Among 40 cases, 32 cases(80%) were married, 8 cases (20%) were unmarried.

Habits:

Among 40 cases, 3 cases (7.5%) were alcohol consumer, 3 cases (7.5%) were smoker.

Treatment History:

Among 40 cases, 7 cases (17.5%) had taken allopathic treatment in the past and had discontinued the same. The rest the 33 cases (82.5%) had not taken any other drugs prior to enrolling for the study.

Family History:

Among 40 cases, there was no family history.

Distribution of cases by Paruvakaalam(Seasons):

In this study, 40 cases (100%) were reported in Pinpani kaalam (Feb 13- Apr 13).

Thinai Distribution:

In this study, 34 cases (85%) were reported from Neithal land (Coastal region), 6 cases (15%) were from Maarutham thinai.

Inference:

In Siddha, it was mentioned that Neithal is a land which is responsible for vatha disease.Mineral content of water in this Neithal land may contribute to the formation of kidney stones.

Yakkai Distribution:

Among 40 cases, 26 cases (65%) were Vatha thegi, 12 cases (30%) were Pitha thegi and 2 cases (5%) was Kapha thegi.

Gunam Distribution:

Among 40 cases under the analysis were predominantly of Rajo Gunam was assessed from the interrogation and other observation.

Distribution Of Cases By Envagai Thervugal (Eight- Fold Examination)

In En vagaithervukal, Mothiram was found to be affected in all the 40 cases (100%). Naa was affected in 2 cases (5%).

Distribution Of Cases By Naadi:

In this study,Vali Azhal naadi was felt in 32 cases(80%),Azhal Vali naadi was felt in 7cases(17.5%),Vali Iyyam naadi was felt in 1case (2.5%).

Distribution Of Cases By Udal Kattukal:

Among 40 patients, Saaram was affected (general tiredness) in all the 40 cases (100%).Senneer was affected (reduction in Hb level) in 4 cases (10%) .

Distribution Of Cases By Kosangal:

Among 40 cases, Vignanamaya kosam was affected (pain from loin to groin) in all the 40 cases (100%), Annamaya kosam was affected (abdominal pain) in 32 cases (80%), Pranamaya kosam were affected (cold, cough) in 2 cases(5%),other kosangal manomaya kosam, Anandamaya kosam were normal in almost all the 40 cases(100%).

Derangement Of Vatham:

Abaanan (burning micturition), samaanan (Abaanan,viyaanan affected), viyaanan (pain from loin to groin) were affected in all the 40 cases (100%).Udaanan was affected(nausea and vomiting) in 4cases(10%).

Derangement Of Pitham:

Sathaga pitham was affected (unable to perform their routine duties) in all the 40 cases (100%), Anar pitham was affected (abdominal pain) in 28 cases(70%) , Ranjaga pitham was affected(Hb level reduced) in 4 cases (10%)

Derangement Of Kabam

Avalambagam was affected (Cold, cough) in 2 cases (5%).

Distribution Of Cases By Neerkuri:

Colour- yellow coloured urine was observed in 36 cases (90%) and straw coloured was observed in 4 cases (10%).

Volume- The volume of urine was reduced in amount in 15 cases (37.5%), rest of cases had normal urine volume.

Enjal - Enjal was found to be normal in almost all cases (100%). Manam, Edai,Nurai - No other changes were observed.

Distribution Of Cases By Neikuri:

Among 40 cases,in 6 cases(15%) the neikuri was observed as serpentine like(Vatha neer).In 20 cases(50%) the neikuri was observed as annular like(Pitha neer).In 12 cases(30%) the neikuri was observed as pearl like(Kaba neer). In 2 cases (5%) the neikuri was observed as thontham type.

Distribution Of Calculus In Urinary System:

Among 40 cases,19 cases (47.5%) had Bilateral renal caculi,21 cases(52.5%) had Unilateral renal calculi,Out of them 12 cases (30%) in Right kidney and 9 cases (22.5%)in Left kidney, 8 cases (20%) had Ureteric calculi.

Distribution Of Cases By Chronicity Of Illness:

Among 40 cases (100%) 0 to 3 months chronicity of illness was found in 35 cases (87.5%),4 to 6 months chronicity of illness was found in 4 cases (10%), above 9 months chronicity of illness was found in 1 case (2.5%)

Clinical Features (Before Treatment):

In clinical features,all the 40 cases (100%) had pain from loin to groin region.35cases(87.5%) had burning micturition and 28 cases(70%) had abdominal pain,4 cases(10%) had nausea,10 cases (25%) had agonizing pain,2 cases(5%) had vomiting and 15 cases(37.5%) had oliguria.

Outcome:

Primary Outcome Observation:

Result From USG Abdomen After Treatment:

All the 40 cases were taken ultra sonography, after the completion of the trial drug treatment.
Among the 40 cases stone completely dissolved in 13 cases (32.5%)
Size (>3mm) and number of stone is reduced in 11cases (27.5%)
In 9 cases (22.5%) size of the stone was reduced less than 3mm.

In 7cases (17.5%) there was no changes in size of stone but clinical symptoms were completely relieved. Based on above results, 24cases (60%) showed good improvement and 9cases (22.5%) showed moderate improvement, 7 cases (17.5%) cases showed poor prognosis.

Good results –normal study (stone completely dissolved)

Reduced in its number

Reduced its size more than 3mm

Moderate- Reduced its size less than 3mm

Poor- no change in stone size and increase in stone size.

Secondary Outcome Observation:

Improvement In Clinical Feature:

symptoms such as Burning micturition,abdominal pain,yellow coloured urination, oliguria, nausea, vomiting and agonizing pain were relieved in almost all the 40 cases(100%). Pain from loin to groin region was relieved in 37 cases (92.5%).except in 3 cases (7.5%) the Pain from loin to groin region persisted.

Improvement:

Among 40 cases 37 cases (92.5%) had clinically good improvement(symptoms completely relieved) after treated with trial drug,3 cases (7.5%) had moderate improvement (symptoms reduced), there was nil poor improvement.

Biochemical study

Qualitative analysis of Koozhpaanda chooranam reveals that the trial medicine contains the following:

- Chloride
- Carbonate
- Iron
- Starch
- Alkaloid
- Reducing sugar
- Tannic acid

SUMMARY

SUMMARY

- The aim of the study is to evaluate the therapeutic efficacy of the drug Koozhpaanda chooranam (internal) in Azhal kalladaippu.
- Before initiating the clinical trial, approval was got from the Institutional Ethical committee(NIS/IEC/8-14/4-26-8-2014) for conducting the clinical studies respectively by submitting the well defined protocol and proforma.
- The raw drugs were authenticated by the concerned department and the trial drug was prepared by the investigator in the Gunapadam lab of National Institute of Siddha as per the standard operating procedure mentioned in the protocol.
- The biochemical (qualitative) analysis were done at the bio chemistry lab of National Institute of Siddha. Physico chemical (quantitative) analysis and HPTLC were done at SCRI, Arumbakkam, Chennai.
- For clinical study 60 cases were screened based on inclusion and exclusion criteria at the OPD of Department of Maruthuvam, NIS.Out of 60 cases 40 cases were recruited for the clinical trial.Clinical diagnosis of Azhal kalladaippu was made by both Siddha and modern methodology.
- Before initiating the trial informed consent was obtained from the patients.
- A day before starting the trial drug treatment, purgation as given (Agathiya kulambu 130mg with sangankuppi juice) to correct the elevated mukkutrams.
- The patients were treated for a period of 48 days.The trial medicine selected for internal treatment was Koozhpaanda chooranam (internal medicine) at the dose of 1.5g twice a day with adjuvant of hot water referred under Siddha literature'Aathmaratchamirtham ennum vaidhiya saara sangragam', page no 479.
- Required laboratory investigations were carried out before and after treatment and the concerned data was recorded in the proforma.
- Clinical assessment was done during each visit in OPD patients (8 days once) and the data was noted in the prescribed proforma.
- During the study period there was no event of any adverse reactions owing to the drug and disease.
- The biochemical study of the trial drug reveals the presence of Chloride, Iron, Tannic acid, Reducing sugar etc.
- Statistical analysis showed significant difference between before and after treatment in the kidney stone size($p<0.0001$) and symptoms($p<0.0001$)

- 37 cases (92.5%) had clinically good improvement (symptoms completely reduced) after treated with trial drug, 3 cases (7.5%) had moderate improvement (symptoms reduced).
- All the 40 cases were taken ultra sonography, after the completion of the trial drug treatment.
- Among the 40 cases stone completely dissolved in 13cases (32.5%)
- Size (>3mm) and number of stone is reduced in 11cases (27.5%)
- In 9 cases (22.5%) size of the stone was reduced less than 3mm.
- In 7cases (17.5%) there was no changes in size of stone but clinical symptoms were completely relieved.

Based on above results,24 cases (60%) showed good improvement and 9 cases(22.5%) showed moderate improvement,7cases (17.5%) cases showed poor prognosis.

Good results –normal study (stone completely dissolved)

Reduced in its number

Reduced its size more than 3mm

- **Physico chemical analysis:**

S.NO	Physico chemical Parameter	Mean
1.	Loss on Drying at 105^{o}C	8.359%
2.	Total Ash	10.696%
3.	Water soluble Ash	2.734%
4.	Acid Insoluble Ash	5.952%
5.	Water soluble Extractive	21.99%
6.	Alcohol Soluble Extractive	21.615%
7.	Assay for Calcium	0.501%
8.	PH	3.87

- **HPTLC REPORT:**

HPTLC fingerprint at 254 nmUV showed highest peak in 8th peak (0.56Rf, 31.54% area) which could serve as a marker and and it is responsible for biological action.

CONCLUSION

CONCLUSION

- The aim of the study was to evaluate the therapeutic efficacy of the trial drug Koozhpaanda chooranam (internal) in Azhal Kalladaippu.
- Clinical study revealed the therapeutic efficacy of the trial drug was read from USG Abdomen. 24 cases (60%) showed good improvement, 9 cases (22.5%) showed moderate improvement and 7 cases (17.5%) showed poor prognosis.
- After treatment 37 cases (92.5%) showed clinically good improvement (symptoms completely reduced) after treatment,3 cases (7.5%) had moderate improvement.
- There were no adverse reaction complained during the trial.
- Therewere no recurrence of Renal stone with follow up period of two months.
- Statistical analysis showed significant difference between before and after treatment in the kidney stone size ($p<0.0001$) and symptoms ($p<0.0001$)
- Because of the encouraging clinical outcome, the study may be further carried out with the same drug in large number of cases in future.

ANNEXURES

PROFORMA

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AYOTHIDASAR PANDITHAR HOSPITAL

DEPARTMENT OF MARUTHUVAM

AN OPEN CLINICAL STUDY ON "AZHAL KALLADAIPPU" (RENAL CALCULI) AND THE DRUG OF CHOICE IS "KOOZHPAANDA CHOORNAM" (INTERNAL)

FORM I - SCREENING AND SELECTION PROFORMA

1. O.P No: _____ 2. S.No: _____

3. Name : _____ 4. Age (years): 5. Gender: Male/ Female

6. Contact No: _____

7. Address:

8.INCLUSION CRITERIA:

Patients who will fulfill any of the following criteria will be included in the study:

- Age:20-60 yrs Yes / No
- Sex: Both sex Yes / No
- Patients who are having the classical symptoms of abdominal pain, distension, pain from loin to groin,pain in urethra, agonizing pain, dysuria, oliguria, yellow coloured urination, burning micturition, haematuria, nausea, vomiting. Yes/No
- Patient with renal calculus detected on USG Abdomen**,** Stone size:≥ 4mm & 10mm≤ Yes / No
- Patient willing to sign the informed consent stating that he/she will conscientiously stick to the treatment during 48 days but can opt out of the trial of his/her own conscious discretion. Yes/No
- Patient who are willing to take Ultrasonography investigation (USG- Abdomen/ KUB) and provide blood for lab investigation Yes / No

9.EXCLUSION CRITERIA:

- Stone size >10mm,<4mm Yes / No
- Diabetes mellitus Yes / No
- Hypertension Yes / No
- Chronic kidney disease Yes / No
- Cardiac disease Yes / No
- Pregnancy and lactation Yes / No
- Presence of any associated severe systemic illness like CA Yes / No

10.<u>ADMITTED TO TRAIL</u>: YES ☐ NO ☐ If Yes Serial No:

Date:

Station:

Signature of the Investigator

Signature of the Lecturer: Signature of the HOD

:

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AYOTHIDOSS PANDITHAR HOSPITAL

DEPARTMENT OF MARUTHUVAM

AN OPEN CLINICAL STUDY ON "AZHAL KALLADAIPPU" (RENAL CALCULI) AND THE DRUGOF CHOICE IS "KOOZHPAANDA CHOORNAM" (INTERNAL)

FORM II-CASE RECORD FORM

1. Serial No: _____ 2. OP/IP No: ----------

3. Name: _____ 4. Gender: Male / Female

5. Age (years): _____ DOB ☐☐ ☐☐ ☐☐☐☐

Date Month Year

6. Address: ----------

---

7. A) Occupation: ---------- B) Nature of work ----------

8. Educational Status: A) Illiterate ☐ B) Literate ☐

9. Height: --------- cms 10.Weight: ---------- kg

11. Complaints and Duration:

_____

_____

_____

_____

12. Habit of

A) Smoking	1. Yes; duration _____ years; Number-	2.No
B) Tobacco chewing	1. Yes; duration _____ years	2.No
C) Betel chewing	1. Yes; duration _____ years	2.No
D) Alcoholism	1. Yes; duration _____ years; Quantity-	ml 2.No

13. Dietary style: A. Pure vegetarian ☐ B. Non-vegetarian ☐ C. mixed diet ☐

14. Drug History: Had the patient been treated before with allopathic drug? A) Yes ☐ 2) No ☐

15 MARITAL STATUS: 1.Married ☐ 2.Unmarried ☐

No of children: ☐ male: ☐ female: ☐

16. FAMILY HISTORY:

Whether this problem runs in family? 1. Yes ☐ 2.No ☐

If yes, mention the relationship of affected person(s) ----------

---

17. MENSTRUAL HISTORY:

18. BOWEL HABITS & MICTURITION: Normal ☐

History of habitual constipation 1.Yes ☐ 2.No ☐

History of frequent diarrhoea 1.Yes ☐ 2.No ☐

History of frequent dysuria 1.Yes ☐ 2.No ☐

(Burning micturition/haematuria)

19. PSYCHOLOGICAL STATE:

Normal ☐ Anxiety ☐ Depression ☐

20.SIDDHA SYSTEM OF EXAMINATION:

ENVAGAI THERVU:[EIGHT-FOLD EXAMINATION]

I.NAADI: [PULSE PERCEPTION]

	0th day	8th day	16th day	24th day	32nd day	40th day	48th day
Vali							
Azhal							
Iyyam							
Vali Azhal							
Azhal vali							
Iyya vali							
Vali Iyyam							
Azhal Iyyam							
Iyya Azhal							

II.NAA:[TONGUE]

	0th day	8th day	16th day	24th day	32nd day	40th day	48th day
Colour	normal/ Red pale/yellow	normal/ Red pale/yellow	normal/ Red pale/yellow	normal/ Red pale/yellow	normal/ Red pale/yellow	normal/ Red pale/yellow	normal/ Red pale/yellow
Taste	Sweet/Sour/ Pungent/ Bitter/None	Sweet/Sour/ Pungent/ Bitter/None	Sweet/Sour/ Pungent/ Bitter/None	Sweet/Sour/ Pungent/ Bitter/None	Sweet/Sour/ Pungent/ Bitter/None	Sweet/Sour/ Pungent/ Bitter/None	Sweet/Sour / Pungent/ Bitter/None
Coating	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Fissure	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Saliva	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased

Dryness	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Glossitis	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Baldness	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent

III.NIRAM:[COMPLEXION]

0th day	**8th day**	**16th day**	**24th day**	**32nd day**	**40th day**	**48th day**
Dark/pale/ Yellow tinted/ whitish brown	Dark/pale/ Yellow tinted/ whitish brown	Dark/pale/ Yellow tinted/ whitish brown	Dark/pale/ Yellow tinted/ whitish brown	Dark/pale/ Yellow tinted/ whitish brown	Dark/pale/ Yellow tinted/ whitish brown	Dark/pale/ Yellow tinted/ whitish brown

IV.MOZHI:[VOICE]

0th day	**8th day**	**16th day**	**24th day**	**32nd day**	**40th day**	**48th day**
Medium/ High/ Low pitched	Medium/ High/ Low pitched	Medium/ High/ Low pitched	Medium/ High/ Low pitched	Medium/ High/ Low pitched	Medium/ High/ Low pitched	Medium/ High/ Low pitched

V.VIZHI:[EYES] (Lower palpebral conjunctiva)

0th day	**8th day**	**16th day**	**24th day**	**32nd day**	**40th day**	**48th day**
normal/ Red pale/yellow	normal/Red pale/yellow	normal/Red pale/yellow	normal/ Red pale/yellow	normal/ Red pale/yellow	normal/ Red pale/yellow	normal/ Red pale/yellow

VI. MALAM:[BOWEL HABITS / STOOLS]

	0th day	**8th day**	**2ndwk**	**24th day**	**32nd day**	**40th day**	**48th day**
Colour	Dark/pale/ yellow/ Red	Dark/ pale/ yellow/ Red	Dark/ pale/ Yellow/ Red	Dark/pale/ yellow/ Red	Dark/pale/ yellow/ Red	Dark/pale/ yellow/ Red	Dark/pale/ yellow/ Red
Consistency	Solid/	Solid/	Solid/	Solid/	Solid/	Solid/	Solid/

	Semisolid/ Watery	Semisoli d/Watery	Semisoli d/Watery	Semisolid/ Watery	Semisolid/ Watery	Semisolid/Wat ery	Semisolid/Wate ry
stool bulk	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced	Normal/ Reduced
Constipation	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Diarrhea	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent

VII.MOOTHIRAM:[URINE EXAMINATION]

Neerkkuri	**0th day**	**8th day**	**16th day**	**24th day**	**32nd day**	**40th day**	**48th day**
Niram [Colour]	Yellow/ Red/ White/ Straw coloured/ Crystal clear	Yellow/ Red/ White/ Straw coloured/ Crystal clear	Yellow/ Red/ White/ Straw coloured/ Crystal clear	Yellow/ Red/ White/ Straw coloured/ Crystal clear	Yellow/ Red/ White/ Straw coloured/ Crystal clear	Yellow/ Red/ White/ Straw coloured/ Crystal clear	Yellow/ Red/ White/ Straw coloured/ Crystal clear
Manam [Odour]	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Nurai [Froth]	Nil/ Reduced/ Increasd	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased	Nil/ Reduced/ Increased
Edai [Sp.gravity]	Normal/ Increa/Re duced	Normal/ Increased /Reduced	Normal/ Increased /Reduced	Normal/ Increased/ Reduced	Normal/ Increased/Re duced	Normal/ Increased/Red uced	Normal/ Increased/ Reduced
Enjal [Deposits]	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent	Present/ Absent
Volume	Normal/ Increased / Reduced	Normal/ Increased / Reduced	Normal/ Increased / Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced	Normal/ Increased/ Reduced

Neikkuri	**0th day**	**8th day**	**16th day**	**24th day**	**32nd day**	**40th day**	**48th day**
Serpentine fashion	at___mints	at___ mints	at___ mints	at___ mints	at___ mints	at___ mints	at___ mints
Annular/ Ringed fashion	at___mints	at___ mints	at___ mints	at___ mints	at___ mints	at___ mints	at___ mints
Pearl beaded fashion	at___mints	at___ mints	at___ mints	at___ mints	at___ mints	at___ mints	at___ mints
Mixed fashion	at___mints	at___ mints	at___ mints	at___ mints	at___ mints	at___ mints	at___ mints
Other fashion	at___mints	at___ mints	at___ mints	at___ mints	at___ mints	at___ mints	at___ mints

VIII. SPARISAM:[PALPATORY PERCEPTION]

0th day	**8th day**	**16th day**	**24th day**	**32nd day**	**40th day**	**48th day**
Warmth/ Hot/ cold/ Sweat	Warmth/ Hot/cold/ Sweat	Warmth/Hot /cold/ Sweat	Warmth/Hot/ cold/ Sweat	Warmth/Hot /cold/ Sweat	Warmth/Hot /cold/ Sweat	Warmth/Hot /cold/ Sweat

THEGI:[TYPE OF BODY CONSTITUTION]

Vatham predominant		Kabam predominant	
Pitham predominant		Thondha udal	

NILAM: [LAND WHERE PATIENT LIVED MOST]

Kurinji (Hilly terrain) ☐ Mullai (Plains) ☐ Marutham (Coastal belt) ☐ Neithal (Aridregions) ☐ Paalai (Forest range) ☐

KAALAM: [SEASON]

Kaarkalam ☐ Pinpanikalam ☐

Koothirkalam ☐ Ilavenil ☐

Munpanikalam ☐ Muthuvenil ☐

GUNAM:[CHARACTER]

Sathuvam ☐ Rasatham ☐ Thamasam ☐

IYMPORIGAL:[SENSORY ORGANS]

	0th day	**8th day**	**16th day**	**24th day**	**32nd day**	**40th day**	**48th day**
	Normal/ Affected	**Normal/ Affected**	**Normal/ Affected**	**Normal/ Affected**	**Normal/ Affected**	**Normal/ Affected**	**Normal/ Affected**
Mei [Skin							
Vaai [Buccalcavity]							
Kan [Eyes]							
Mooku[Nose]							
Sevi [ear]							

IYMPULANGAL:[MOTOR ORGANS]

	0th day	**8th day**	**16th day**	**24th day**	**32nd day**	**40th day**	**48th day**
	Normal/ Affected	**Normal/ Affected**	**Normal/ Affected**	**Normal/ Affected**	**Normal/ Affected**	**Normal/ Affected**	**Normal/ Affected**
Kai [upperlimb]							
Kal [lowerlimb]							
Vai[Buccal cavity]							
Eruvai [excretory organ]							
Karuvai [Reproductive organ]							

KOSAM:[SHEATHS]

	0th day	8th day	16th day	24th day	32nd day	40th day	48th day
	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected
Annamaya kosam							
Pranamaya Kosam							
Manonmayakosam							
Vingyanamaya kosam							
Anandhamaya kosam							

MUKKUTRAM:[AFFECTION OF THREE HUMORS]

A) VATHAM:

	0th day	8th day	16th day	24th day	32nd day	40th day	48th day
	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected
Praanan							
Abaanan							
Samaanan							
Udhaanan							
Viyaanan							
Naahan							
Koorman							
Kirukaran							
Devathathan							
Dhananjeyan							

B) PITHAM:

	0th day	8th day	16th day	24th day	32nd day	40th day	48th day
	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected
Analapitham							
Prasakam							
Ranjakam							
Aalosakam							
Saathakam							

C) KABAM:

	0th day	8th day	16th day	24th day	32nd day	40th day	48th day
	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected
Avalambagam							
Kilethagam							
Pothagam							
Tharpagam							
Santhigam							

SEVEN DHATHUS:[SEVEN SOMATIC COMPONENTS]

	0th day	8th day	16th day	24th day	32nd day	40th day	48th day
	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected	Normal/ Affected
Saaram[chyme]							
Senneer[Blood]							
Oon[Muscle]							
Kozhuppu[Fat]							
Enbu[Bones]							
Moolai[Bonemarrow]							
Sukkilam/ Suronitham [Genital discharges]							

SYSTEMIC EXAMINATION:

	0th day	8th day	16th day	24th day	32nd day	40th day	48th day
CardioVascular System							
Respiratory System							
Gastrointestinal System							
Central Nervous System							
Endocrine Syste							

GENERAL EXAMINATION:

	0th day	8th day	16th day	24th day	32nd day	40th day	48thday
Height (cms)							
Weight (kg)							
Temperature(°F)							
Pulse rate (per min)							
Heart rate (per min)							
Respiratory rate(per min)							
Blood pressure(mm/Hg)							
Pallor							
Jaundice							
Cyanosis							
Lymphadenopathy							
Pedal edema							
Clubbing							
Jugular vein pulsation							

CLINICAL SYMPTOMS:

	0th day	**8th day**	**16th day**	**24th day**	**32nd day**	**40th day**	**49th day**
Abdominal pain							
Pain from loin to groin							
Agonizing pain							
Pain in urethra							
Yellow coloured urination							
Burning micturition							
Oliguria							
Dysuria							
Abdominal distension							
Nausea & Vomiting							
Haematuria							

USG- Whole Abdomen:

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD:**

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AYOTHIDASAR PANDITHAR HOSPITAL

DEPARTMENT OF MARUTHUVAM

AN OPEN CLINICAL STUDY ON"AZHAL KALLADAIPPU" (RENAL CALCULI) AND THE DRUG OF CHOICE IS "KOOZHPAANDA CHOORNAM" (INTERNAL)

FORM III LABORATORY PARAMETERS-CHART

1. OP No: _____ 2.S. No: _____

4. Name: _____ 5. Age: _____ years 6. Gender: M/F

BLOOD INVESTIGATION		0th DAY Date:	49th day Date	NORMAL VALUES
HB (gms%)				M:14-18 ;W:11-15
T.RBC(milli/cu.mm)				M:4.5-6.5 ;W:3.5-5.5
ESR (mm)	½ hr.			
	1 hr.			M:0-10 ;W:0-20
T.WBC (cu.mm)				4000-11,000
DIFFERENTIAL COUNT (%)	Polymorphs			40-75
	Lymphocytes			20-35
	Monocytes			2-10
	Eosinophils			1-6
	Basophils			0-1
BT (per min)				2-6
Clotting time				3-8
Blood glucose (mg/dl)	Fasting			80-120
	PP			<130
	Random			<140
Lipid profile (mg/dl)	Serum cholesterol			150-250
	HDL			30-60
	LDL			Upto 130
	VLDL			40
	TGL			Upto 160

RFT (mg/dl)	**Blood urea**			**16-50**
	Serum creatinine			**0.6-1.2**
	Serum Uric acid			**M:3-9 ;W: 2.5-7.5**
LFT (mg/dl)	**Total bilirubin**			**0.3-1**
	Direct bilirubin			**0.1-0.3**
	Indirect bilirubin			**0.2-0.8**
	Serum total protein			**6-8**
	Serum Albumin			**3.5-5.5**
	Serum globulin			**2-3.5**
	Fibrinogen(g/dl)			**0.2-0.4**
	Serum calcium			**9-11**
	Serum phosphorous			**2-5**
	SGOT (IU/L)			**0-40**
	SGPT (IU/L)			**0-35**
	Alkaline phosphatase (kingÅ units)			**80-290**

URINE INVESTIGATION	**Before TMT** **Date:**	**After TMT** **Date:**
Albumin		
Neerkkuri		
Niram		
Manam		
Nurai		
Edai		
Enjal		
Neikkuri		
Fasting sugar		

PP sugar		
Random Sugar		
Deposits		
Bile salts		
Bile pigments		
Urobilinogen		
Culture & sensitivity		
MALAM		
Ova		
Cyst		
Occult blood		

SCAN: USG ABDOMEN

Specific investigation		**Size of the kidney**	**site of the calculus**	**No of calculus**	**Size of the calculus**	**Hydro nephrosis**
Rt kidney	**Before treatment (0^{th} day)**					
	After treatment (49^{th} day)					
Lt kidney	**Before treatment (0^{th} day)**					
	After treatment (49^{th} day)					

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer:

Signature of the HOD

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AYOTHIDASAR PANDITHAR HOSPITAL

DEPARTMENT OF MARUTHUVAM

AN OPEN CLINICAL STUDY ON"AZHAL KALLADAIPPU" (RENAL CALCULI) AND THE DRUG OF CHOICE IS "KOOZHPAANDA CHOORNAM" (INTERNAL)

FORM IV (DRUG COMPLIANCE FORM)

S. NO: --------- OPD/IPD NO : ---------- NAME :----------

Name Of The Drug: KOOZHPAANDA CHOORNAM , 1.5gm,twice a day with hot water

On 0th day–Date ;Drug issued: (Nos) / Drug returned: (Nos)

On 8th day-Date: ;Drug issued: (Nos) / Drug returned: (Nos)

On 16th day -Date: ;Drug issued: (Nos) / Drug returned: (Nos)

On 24th day-Date: ;Drug issued: (Nos) / Drug returned: (Nos)

On 32nd day-Date: ;Drug issued: (Nos) / Drug returned: (Nos)

On 40th day-Date: ;Drug issued: (Nos) / Drug returned: (Nos)

On 48thday-Date: ;Drug issued: (Nos) / Drug returned: (Nos)

Day	Date	Morning	Evening
Day 1			
Day2			
Day3			
Day4			
Day5			
Day6			
Day7			
Day8			
Day9			
Day10			
Day11			
Day12			
Day13			
Day14			
Day15			
Day16			
Day17			
Day18			

Day19			
Day20			
Day21			
Day22			
Day23			
Day24			
Day 25			
Day26			
Day27			
Day28			
Day29			
Day30			
Day31			
Day32			
Day33			
Day34			
Day35			
Day36			
Day37			
Day38			
Day39			
Day40			
Day41			
Day42			
Day43			
Day44			
Day45			
Day46			
Day47			
Day48			

Station:

Date:

Signature of the Investigator:

Signature of the Lecturer: Signature of the HOD

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AYOTHIDASAR PANDITHAR HOSPITAL

DEPARTMENT OF MARUTHUVAM

AN OPEN CLINICAL STUDY ON "AZHAL KALLADAIPPU" (RENAL CALCULI) AND THE DRUG OF CHOICE IS "KOOZHPAANDA CHOORNAM"(INTERNAL)

FORM V- INFORMATION SHEET

Name of the Principal Investigator: Dr.M.Ponmozhi

Name of the Institution : National Institute of Siddha,

Tambaram Sanatorium,

Chennai-47.

- I, Dr.M.Ponmozhi, studying M.D(Siddha) in National Institute of Siddha, Chennai. The disease called **Azhal kalladaippu (Renal calculi)** is formed by the sedimentation of crystalline mineral materials within the kidney or urinary tract.. It includes the symptoms like oliguria, urethral pain mimics pain caused by an insertion of burning iron rod in the urethra, sweating all over body, anuria, agonizing pain, blood stained calculus stagnated in urethra. This condition is being treated in NIS with many siddha formulations. As a part of M.D(S) research programme and developing new efficacious medicine, we propose to study the "**KOOZHPAANDA CHOORNAM"** formulation for treating the condition. This formulation has been mentioned in siddha literature and empirical evidence with contemporary tools is required for documentation. You can receive medicines free of cost. The duration of treatment period is 48 days. You have to visit OPD every week and collect the drugs for **8 days.** The diagnostic tests will be carried out free of cost. We will assess the effect of treatment after completion of **48 days** of treatment using clinical and lab parameters.
- In this regard, we need to ask you few questions. We will maintain confidentiality of your comments and data obtained from you. There will be no risk of disclosing your identity and no physical, psychological or professional risk is involved by taking part in this study.
- Taking part in this study is voluntary. No compensation will be paid to you for taking part in this study. You can choose not to answer any specific question. There is no specific benefit for you if you take part in the study, but you will be under our clinical monitoring and specific attention will be given for your health. Taking part in the study may be of benefit to the community, as it may help us to develop medicine for **Azhal kalladaippu**. In case of any adverse symptoms during the treatment viz, which are expect, acute renal colic i.e. severe pain caused by the kidney stone and associated with nausea, vomiting and fever in few patients during the treatment, shall be reported to PIs and care will be taken in our regular OPD for relief. You can withdraw from the study at the midst of treatment period, if you are not interested to continue and you will receive our usual treatment without any precondition.
- The information we will collect in this study, will remain between you and the principal investigator. We will not write your name on different forms which sent to different investigating/analysis sections and we will use a code instead given by the principal investigator. Only the principal investigator will know the key to this code which will be kept in safe custody. If you agree to be a participant in this study, you will be screened as per the study protocol.
- If you wish to find out more about this study before taking part, you can ask me all the questions you want or contact Dr.**M.Ponmozhi**, PG scholar cum principal investigator of this study, attached to the National Institute of Siddha, Chennai (Mobile phone no:9566194860). You can also contact the Chairman/Member-secretary of Ethics committee, National Institute of Siddha, Chennai – 600047, Tel no: 91-44-22511611, for rights and participation in the study.

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை 47

அயோத்திதாசர் பண்டிதர் மருத்துவமனை

அழல் கல்லடைப்பு **நோய்க்கான சித்த மருந்து கூழ்பாண்ட சூரணத்தின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்.**

FORM V- தகவல் படிவம்

முதன்மை ஆராய்ச்சியாளர் பெயர் : Dr. ம.பொன்மொழி

நிறுவனத்தின் பெயர் : தேசிய சித்த மருத்துவ நிறுவனம்

தாம்பரம் சானட்டோரியம்

சென்னை 47

Dr. ம.பொன்மொழி ஆகிய நான் தேசிய சித்த மருத்துவமனையில் பட்ட மேற்படிப்பு படித்து வருகிறேன். அழல் கல்லடைப்பு என்பது சிறுநீரகம் மற்றும் சிறுநீரக பாதையில் உப்பு வீழ்படிதல் போன்ற காரணங்களால் உண்டாகிறது. இந்நோய் நீர்புழையில் இரும்பை காய்ச்சி சுட்டது போல் எரிச்சல், உடல் முழுவதும் அனலாக இருத்தல், சிறுநீருடன் குருதி வெளிப்படுதல், நீர்புழை குடைவது மற்றும் குத்துவது போல் வலித்தல் மற்றும் நீரிழியும் போது செந்நிற கற்கள் வெளியாதல் போன்ற குறிகுணங்களைத்தோற்றுவிக்கும். இந்நோய்க்கு தேசிய சித்த மருத்துவமனையில் பல சித்த மருந்துகள் பயன்படுத்தப்பட்டு வருகின்றது. சித்த மருத்துவ பட்ட மேற்படிப்பில், ஆய்வின் ஒரு பகுதியாக புதிய மருந்துகளை பயன்படுத்தும் நோக்கில் **கூழ்பாண்ட சூரணம்** மருந்தினை இந்நோய்க்கு வழங்க பரிந்துரை செய்கிறோம். இந்த மருந்தின் செய்முறை, அளவு, அனுபானம் மற்றும் மருத்துவ பயன்கள் அனைத்தும் அங்கீகரிக்கப்பட்ட சித்த மருத்துவ நூலில் கூறப்பட்டுள்ளது. எந்தவித கட்டணமுமின்றி தாங்கள் இந்த மருந்தினை பெற்றுக்கொள்ளலாம். இந்த ஆய்வில் மருந்து உட்கொள்ளும் காலம் 48 **நாட்கள்** ஆகும். வாரம் ஒருமுறை தேசிய சித்த மருத்துவமனைக்கு நேரில் வந்து 8 நாட்களுக்கான மருந்தினை பெற்றுக்கொள்ள வேண்டும். இந்த ஆய்வு சம்பந்தமான ஆய்வக பரிசோதனைகள் கட்டணமின்றி செய்யப்படும். 48 நாட்கள் மருந்து உட்கொள்ளும் காலம் முடிந்த பிறகு நோய்க்கான குறிகுணங்கள் மற்றும் ஆய்வக பரிசோதனைகள் இவற்றின் முடிவுகளின் அடிப்படையில் மருந்தின் பரிகரிப்புத்திறன் கண்டறியப்படும்.

இந்த ஆய்வு சம்பந்தமாக சில கேள்விகளை தங்களிடம் கேட்க இருக்கிறேன். தங்களிடமிருந்து பெறப்படும் கருத்துக்கள் மற்றும் குறிப்புகள் அனைத்தும் நம்பிக்கையாக பதிவு செய்யப்படும்.இந்த ஆய்வில் தங்களை உட்படுத்திக்கொள்வதின் மூலம் எந்த வகையிலும் பாதிப்புக்குள்ளாக மாட்டீர்கள் என உறுதி அளிக்கிறேன்.

எந்தவித வற்புறுத்தலுமின்றி, இந்த ஆய்வில் பங்கேற்கவும், இந்த ஆய்வு சம்பந்தமாக கேட்கப்படும் கேள்விகளுக்கு பதில் கூறவும் தங்களுக்கு முழு சுதந்திரம் அளிக்கப்படுகிறது. இந்த ஆய்வில் பங்கேற்பதற்கு எந்த சன்மானமும் வழங்கப்படமாட்டாது. ஆனால், ஆய்வு முழுவதும் எனது மேற்பார்வையிலும், தங்கள் உடல் நலன் குறித்த தனி கவனத்திலும் ஆய்வு மேற்கொள்ளப்படும். அழல் கல்லடைப்பு நோய்க்கான புதிய மருந்தின் பரிகரிப்புத்திறனை சமூகத்திற்கு உணர்த்தும் வகையில் இந்த ஆய்வு மேற்கொள்ளப்படுகிறது.இந்த ஆய்வினைத் தொடர தங்களுக்கு விருப்பம் இல்லையெனில், எப்பொழுது வேண்டுமானலும் ஆய்வின்

இடையில் விலகிக்கொள்ளவும், இம்மருத்துவமனையில் வழங்கப்படும் இந்நோய்க்கான வழக்கமான மருந்துகளை பெற்றுக்கொள்ளவும் அறிவுறுத்தப்படுகிறீர்கள்.

இந்த ஆய்வில் சேகரிக்கப்படும் விபரங்கள் அனைத்தும் தங்களுக்கும் முதன்மை ஆராய்ச்சியாளரான எனக்கும் இடையில் இரகசியமாக வைக்கப்படும். கேள்வி பதில் வடிவத்தில் தங்களிடம் கேள்விகள் கேட்கப்படும். அனைத்துப் படிவங்களிலும் தங்களின் பெயர் தவிர்க்கப்பட்டு ஆய்வாளரால் தங்களுக்கென தனிக் குறியீடு வழங்கப்படும். அந்தக் குறியீடு ஆய்வாளருக்கு மட்டுமே தெரிந்ததாக இருக்கும். நீங்கள் இந்த ஆய்வில் பங்கேற்க விருப்பப்பட்டால், திட்ட வரைவு படி தேர்வு செய்யப்படுவீர்கள்.

நீங்கள் இந்த ஆய்வில் பங்கேற்கும் முன், இந்த ஆய்வினைப் பற்றிய மேலும் விபரங்கள் பெற வேண்டுமென விருப்பப்பட்டால், இந்த ஆய்வின் முதன்மை ஆராய்ச்சியாளர் மற்றும் தேசிய சித்த மருத்துவமனை, பட்ட மேற்படிப்புத்துறை மாணவர் Dr. ம.பொன்மொழி ஆகிய என்னை 9566194860 என்ற எண்ணில் தொடர்பு கொள்ளலாம். மேலும், நீங்கள் இந்த ஆய்வில், உங்களது பங்கேற்பு மற்றும் உரிமை பற்றி தெரிந்து கொள்ள தேசிய சித்த மருத்துவமனை, தலைவர்/செயற்க்குழு உறுப்பினர் அவர்களையும் 91-44-22511611 என்ற எண்ணில் தொடர்பு கொள்ளலாம்.

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AYOTHIDASAR PANDITHAR HOSPITAL

DEPARTMENT OF MARUTHUVAM

AN OPEN CLINICAL STUDY ON "AZHAL KALLADAIPPU" (RENAL CALCULI) AND THE DRUG OF CHOICE IS "KOOZHPAANDA CHOORNAM" (INTERNAL)

FORM VI-INFORMED CONSENT FORM

CERTIFICATE OF CONSENT

*"**I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction.***

***I consent voluntarily to participate as a participant in this study and understand that I have the right to withdraw from the study at any time without in any way it affecting my further medical care**".*

"I have received a copy of the information sheet/consent form".

In case of illiterate participant

"I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely."

Date:

Signature of a witness

Left thumb Impression of the Participant

(Selected by the participant bearing no connection with the survey team)

Date:

Station:

Signature of participant:

Signature of the Investigator:

Signature of the Lecturer:

Signature of the HOD

தேசிய சித்த மருத்துவ நிறுவனம்

அயோத்திதாச பண்டிதர் மருத்துவமனை, சென்னை - 47.

பட்ட மேற்படிப்பு மருத்துவத்துறை

அழல் கல்லடைப்பு நோய்க்கான சித்த மருந்து கூழ்பாண்ட சூரணத்தின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான ஒப்புதல் படிவம்

FORM VI- ஒப்புதல் படிவம்

நான் மேற்கூறிய தகவல் படிவத்தை படித்து அல்லது படிக்க கேட்டு கொண்டேன். இது தொடர்பான விளக்கங்களையும் கேட்டு தெரிந்து கொண்டேன். எந்தவித வற்புறுத்தலின்றி, என் சொந்த விருப்பத்தின் பேரில் என்னை இந்த ஆராய்ச்சிக்கு உட்படுத்த என் முழுமனதோடும் சுயநினைவோடும் சம்மதம் தெரிவிக்கிறேன். எனக்கு விருப்பமில்லாத பட்சத்தில் இந்த ஆராய்ச்சியில் இருந்து என்னை எப்போது வேண்டுமானாலும் விடுவித்து கொள்ளும் உரிமையை பெற்றுள்ளேன் என்பதையும் அறிவேன்.

தேதி: கையொப்பம்:

இடம்: பெயர் :

சாட்சிக்காரர் கையொப்பம்:

பெயர் :

உறவுமுறை :

நோயாளியின் இடதுகை பெருவிரல்ரேகை

மருத்துவர் கையொப்பம்

NATIONAL INSTITUTE OF SIDDHA
AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 600 047.

DEPARTMENT OF MARUTHUVAM

AN OPEN CLINICAL STUDY ON "AZHAL KALLADAIPPU" (RENAL CALCULI) AND THE DRUG OF CHOICE IS "KOOZHPAANDA CHOORNAM" (INTERNAL)

Name of Principal Investigator: **Reg. No:**

FORM - WITHDRAWAL FORM

1. SERIAL NO OF THE CASE: ……

2. OP / IP NO: .....

3. NAME: ……

4.AGE: ……

5.GENDER:.....

6. DATE OF TRIAL COMMENCEMENT: ……...

7. DATE OF WITHDRAWAL FROM TRIAL: ……..

8. REASONS FOR WITHDRAWAL:

Long absence at reporting:	Yes/ No
Irregular treatment:	Yes/ No
Shift of locality:	Yes/No
Increase in severity of symptoms:	Yes/No
Development of severe adverse drug reactions:	Yes/No
Development of adverse event:	Yes/No

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

NATIONAL INSTITUTE OF SIDDHA
AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 600 047.

DEPARTMENT OF MARUTHUVAM

AN OPEN CLINICAL STUDY ON "AZHAL KALLADAIPPU" (RENAL CALCULI) AND THE DRUG OF CHOICE IS "KOOZHPAANDA CHOORNAM" (INTERNAL)

Name of Principal Investigator: **Reg. No :**

FORM –ADVERSE REACTION FORM

SERIAL NO:

OP/IP NO:

NAME: **AGE:** **GENDER:**

DATE OF TRIAL COMMENCEMENT:

DATE OF THE ADVERSE REACTION OCCUR:

DESCRIPTION OF ADVERSE REACTION:

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

NATIONAL PHARMACOVIGILANCE PROGRAMME FOR SIDDHA DRUGS

Reporting Form for Suspected Adverse Reactions to Siddha Drugs

Please note: i. All consumers / patients and reporters information will remain confidential.
ii. It is requested to report all suspected reactions to the concerned, even if it does not have complete data, as soon as possible.

Peripheral Center code: State:

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

<table>
<tr><td>Name</td><td>Father name</td><td rowspan="2">Patient / Record No.</td></tr>
<tr><td>Ethnicity</td><td>Occupation</td></tr>
<tr><td colspan="2" rowspan="2">Address
Village / Town
Post / Via
District / State</td><td>Date of Birth / Age:</td></tr>
<tr><td>Sex: Male / Female
Weight :
Degam:</td></tr>
</table>

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

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

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

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

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

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

b) Dietary Restrictions if any

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

d) Any other relevant information.

5. Treatment provided for adverse reaction:

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

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

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

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

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

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

Hepatic Renal Cardiac Diabetes Malnutrition

Any Others

9. H/O previous allergies / Drug reactions:

10. Other illness (please describe):

11. Identification of the reporter:

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

Signature of the reporter: **Date:**

Please send the completed form to:

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

The Director

National Institute of Siddha,

(Pharmacovigilance Regional Centre For Siddha Medicine),

Tambaram Sanatorium, Chennai-600 047.

☏ (O) 044-22381314 Fax : 044 – 22381314

Website : www.nischennai.org

Email: nischennaisiddha@yahoo.co.in

* ** * * * *

month of observation /occurrence of ADR

This filled-in ADR report may be sent within one

Who Can Report?

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

What to Report?

⇒ All reactions, Drug interactions,

Confidentiality

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

⇒ Submission of report will be taken up for remedial measures only not for legal claim

Date:

Station:

Date :

Station:

Signature of the Investigator:

Signature of the Lecturer:

Signature of the HOD

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AYOTHIDASAR PANDITHAR HOSPITAL

DEPARTMENT OF MARUTHUVAM

AN OPEN CLINICAL STUDY ON"AZHAL KALLADAIPPU" (RENAL CALCULI) AND THE DRUG OF CHOICE IS "KOOZHPAANDA CHOORNAM" (INTERNAL)

FORMVIII-DIETARY ADVICE FORM

NIS NO: NIS/IEC

Do's:

Need to drink:

- For a day, drink 3-4 liters of water
- Barley rice water
- Nerunjil kudineer
- Kollu kudineer
- Tender coconut

Vegetables:

Bottle guard, Pumpkin, Raddish, Cucumber, Carrot, Lady's finger,

Plantain stem, Broad beans.

Fruits:

Water melon, Papaya, Guava, Lemon.

Greeny leaves:

Indian spinach, Kasini keerai, Keerai thandu.

Seeds:

Cumin seeds, Cucumber seeds.

Dont's:

- Tomato, Cabbage, Cauliflower, Potato, Peas, Mushrooms, Greens
- Grapes, Pine apple
- Milk, Coffee, Tea, Preserved cool drinks, Alcohol
- Non veg foods, Egg, Ice cream, chocolate, Tamarind, Pepper.

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை-47
அயோத்திதாசர் பண்டிதர் மருத்துவமனை

பொதுமருத்துவத் துறை

அழல் கல்லடைப்பு **நோய்க்கான சித்த மருந்தின்** கூழ்பாண்ட சூரணத்தின் **பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான படிவம்**

படிவம் VIII- <u>உணவு பரிந்துரை படிவம்</u>

<u>IEC NO: NIS/IEC</u>

அருந்த வேண்டியவை:

- தினமும் 3-4 லிட்டர் நீர் அருந்த வேண்டும்
- பார்லி கஞ்சி
- நெருஞ்சில் குடிநீர்
- கொள்ளு குடிநீர்
- இளநீர்

காய்கள்:

சுரைக்காய், பூசணிக்காய், முள்ளங்கி, வெள்ளரி, கேரட், வெண்டைக்காய், வாழைத்தண்டு, அவரை

பழங்கள்:

தர்பூசணி, பப்பாளி, கொய்யா, எலுமிச்சை

கீரைகள்:

பசலை, காசினி, கீரைத்தண்டு

விதைகள்:

சீரகம், வெள்ளரிவிதை

தவிர்க்க வேண்டியவை:

- தக்காளி, முட்டைகோஸ், காலிபிளவர், உருளை கிழங்கு, காளான். திராட்சை, அன்னாசி, புளி.
- பால், காபி, டீ, பதப்படுத்தபட்ட பானங்கள், மதுபானம்.
- அசைவம், கீரைகள், முட்டை, ஐஸ்கீரீம், சாக்லேட், மிளகு.

CERTIFICATES

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

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

This certificate is awarded to

Dr./~~Mr./Ms.~~ M. PONMOZHI

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

"Research Methodology & Biostatistics"

for AYUSH Post Graduates & Researchers

Organised by the Department of Siddha

The Tamil Nadu Dr. M.G.R. Medical University from 5th to 9th May 2014.

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

Dr. JHANSI CHARLES, M.D.
Registrar

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

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

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

CERTIFICATE

Address of Ethics Committee: National Institute of Siddha, Tambaram Sanatorium, Chennai-600047, Tamil Nadu, India	
Principal Investigator: Dr.M.Ponmozhi, P.G. Student, Maruthuvam	
Protocol title: Clinical evaluation of siddha drug Koozhpaanda Choornam (Int) in the treatment of Azhal Kalladaippu noi(Renal Calculi)	
Documents filed	1) Protocol, 2) Data Collection forms 3) Patient Information Sheet 4) Consent form 5) SAE(Pharmacovigilance)
Clinical trial Protocol (others – Specify)	**Yes**
Informed consent documents	**Yes**
Any other documents	-
Date of IEC approval & its number	**NIS/IEC/8-14/4- 26-08-2014**

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

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

Chairman **Member Secretary**

NATIONAL INSTITUTE OF SIDDHA CHENNAI 600 047

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 600047

BOTANICAL CERTIFICATE

Certified that the following plant drugs used in the Siddha formulation **"Koozhpaanda chooranam"** (Internal) for the treatment of **Azhal kalladaippu noi** (Renal calculi) taken up for Post Graduation Dissertation studies by **Dr.M.Ponmozhi**, M.D.(S), II year, Department of Maruthuvam, 2015, are identified through Visual inspection, Experience, Education & Training, Organoleptic characters, Morphology, Micromorphology and Taxonomical methods as

Benincasa hispida (Thunb.) Cogn. (Cucurbitaceae), Fruit
Terminalia chebula Retz. (Combretaceae), Fruit
Terminalia bellirica (Gaertner) Roxb. (Combretaceae), Fruit
Glycyrrhiza glabra Linn. (Fabaceae), Root
Elettaria cardamomum Maton (Zingiberaceae), Fruit
Syzygium aromaticum (Linn.) Merr. & L.M. Perry (Myrtaceae), Flower bud
Cuminum cyminum Linn. (Apiaceae), Fruit
Zingiber officinale Rosc. (Zingiberaceae), Rhizome
Piper nigrum Linn. (Piperaceae), Fruit
Piper longum Linn. (Piperaceae), Fruit
Michelia champaca Linn. (Magnoliaceae), Flower

Certificate No: NISMB1942015

Date: 08-09-2015

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

சித்த மருத்துவ மைய ஆராய்ச்சி நிலையம், அரும்பாக்கம், சென்னை - 600106
सिद्ध केन्द्रीय अनुसंधान संस्थान, अरुम्बाक्कम, चेन्नै - 600106
Siddha Central Research Institute
(Central Council for Research in Siddha, Ministry of AYUSH, Govt. of India)
Arumbakkam, Chennai – 600106
[Ph: 044-26214925, 26214809, Fax: 26214809, Email: crisiddha@gmail.com, Web: www.siddhacouncil.com]

29.12.2015

CERTIFICATE

Certified that the samples submitted for identification by Dr. M. Ponmozhi, II year MD Student, Department of Maruthuvam, National Institute of Siddha, Sanatorium, Chennai-600 047 is identified as Kalmatham – Hydrous calcium sulphate.

29/12/15

(R. Shakila)
Research Officer (Chemistry)

P. Ponmozhi
Dr. P. Elankani R.O(Sec. 2)

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

சித்த மருத்துவ மைய ஆராய்ச்சி நிலையம், சென்னை - 600106
सिद्ध केंद्रीय अनुसन्धान संस्थान, अण्णा सरकारी अस्पताल परिसर, अरुम्बाक्कम, चेन्नई - 600106

SIDDHA CENTRAL RESEACH INSTITUTE

(Central Council for Research in Siddha, Ministry of AYUSH, Govt. of India)
Anna Govt. Hospital Campus, Arumbakkam, Chennai – 600106
Phone: 044-2621 4925, Fax: 044-2621 4809
www.crisiddha.tn.nic.in, Email: crisiddha@gmail.com

19.04.2016

Name of the student: Dr. M. Ponmozhi, III Year MD Student,
Department of Maruthuvam, National Institute of Siddha, Chennai-47.

PHYSICO-CHEMICAL ANALYSIS OF KOOZHPAANDU CHOORANAM

S.No	Physicochemical Parameter		Mean
1.	Loss on Drying at 105°C	:	8.359 %
2.	Total Ash	:	10.696 %
3.	Water soluble Ash	:	2.734 %
4.	Acid insoluble Ash	:	5.952 %
5.	Water Soluble Extractive	:	21.99 %
6.	Alcohol Soluble Extractive	:	21.615 %
7.	Assay for Calcium	:	0.501 %
8.	pH	:	3.87
9.	HPTLC	:	Annexed

19/4/16

(R. Shakila)
Research Officer (Chemistry)

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

BHARAT SCANS
Innovation at work

Patient name	Mr. SURESH	Age/Sex	33 Years / Male
Patient ID	USG/1516002460	Visit no	1
Referred by	Dr. NATIONAL INSTITUE OF SIDDHA	Visit date	30/01/2016

ABDOMEN REPORT

Real time B - mode ultrasonography Abdomen report

Liver
Liver is normal in size (134 mm)
with normal echotexture.
No focal alteration in echotexture.
intrahepatic biliary radicles appear normal.
common duct appears normal.
portal and hepatic veins appear normal.

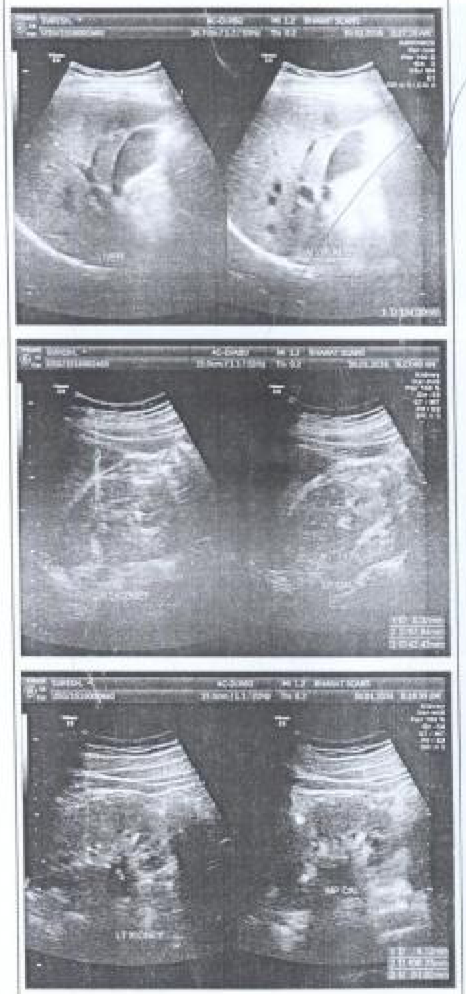
Gall Bladder
Gall bladder is adequately distended.
No abnormal intraluminal echoes.
Wall thickness appears normal.

Pancreas
Pancreas normal in size.
It shows uniform echotexture.
No evidence of calcification.

Spleen
Spleen appears normal in size.
It measures 75 mms.
It shows uniform echotexture.

Aorta
Aorta appears normal in calibre I.V.C. normal.
No significant retroperitoneal lymphadenopathy.
No free fluid in the peritoneal cavity.
Right iliac fossa scanning shows
no abnormal sonographic features.

Both Kidneys
Right Kidney measures 98 x 42 mm
Calculus measuring ~ 5.3 mm noted in the lower pole of right kidney.
Left Kidney measures 106 x 51 mm
Calculus measuring ~ 4.1 mm noted in the



Quality is our Image

BHARAT SCANS
Innovation at work

Patient name	Mr. SURESH	Age/Sex	33 Years / Male
Patient ID	USG/1516002460	Visit no	1
Referred by	Dr. NATIONAL INSTITUE OF SIDDHA	Visit date	30/01/2016

mid pole of left kidney
Normal cortical echoes.
Cortico medullary differentiation is maintained.
Pelvicalyceal systems on both sides appear normal.

Bladder
Bladder normal in contour.
No abnormal intraluminal echoes.
Wall thickness appears normal.

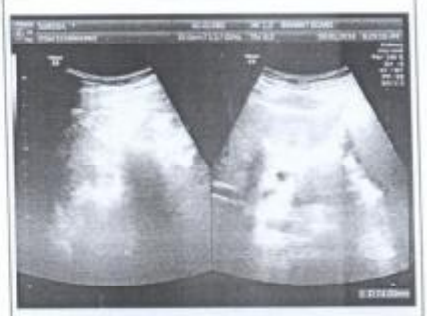
Prostate
Appears normal.
It measures 41 x 33 x 31 mm (Vol 23 ml).
No intravesical enlargement of prostate gland seen.
It shows uniform echotexture.

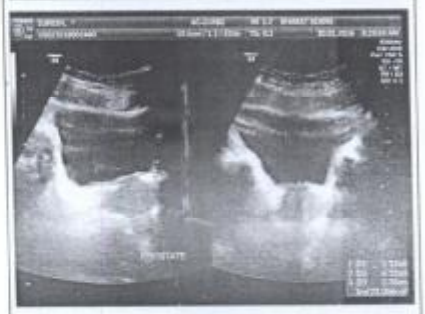
IMPRESSION:

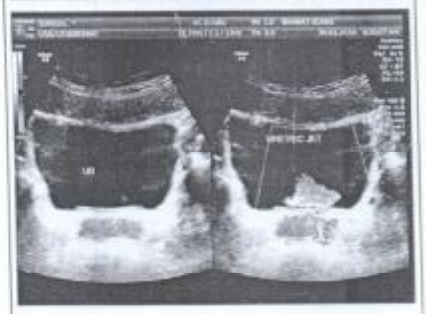
*** Bilateral renal calculi.**

--Suggested clinical correlation.

DR.SUSHMA







Quality is our Image

ROYAPETTAH
197, Peters Road,
Royapettah, Chennai - 14.
99414 79700, 98412 57779
Ph : 044-45 555 555

ANNA NAGAR
A9-1 2nd Avenue,
Anna Nagar, Chennai - 40.
Ph : 044-44 100 100
98410 55900

NANGANALLUR
19, Madavilakam Main Road,
Vanuvampet, Chennai - 91.
Ph : 044-44 700 700
95510 71777

TAMBARAM
105, Madhiran Road,
West Tambaram, Chennai - 45.
Ph : 044-44 500 900
98419 49507

ASHOK NAGAR
84, 1st Avenue,
Chennai - 83.
Ph : 044-44 200 200
98410 46663

TIRUNELVELI
110, North Bye Pass Road,
Vannarpettai, Tirunelveli - 03.
Ph : 0462 - 40 40000
72330 70008

www.bharatscans.com

BHARAT SCANS
Innovation at work

Patient name	Mr. SURESH.K	Age/Sex	33 Years / Male
Patient ID	USG/1516008486	Visit no	1
Referred by	Dr. NATIONAL INSTITUE OF SIDDHA	Visit date	08/04/2016

ABDOMEN REPORT

Real time B - mode ultrasonography Abdomen report

Liver
Liver is normal in size
with normal echotexture.
No focal alteration in echotexture.
intrahepatic biliary radicles appear normal.
common duct appears normal.
portal and hepatic veins appear normal.

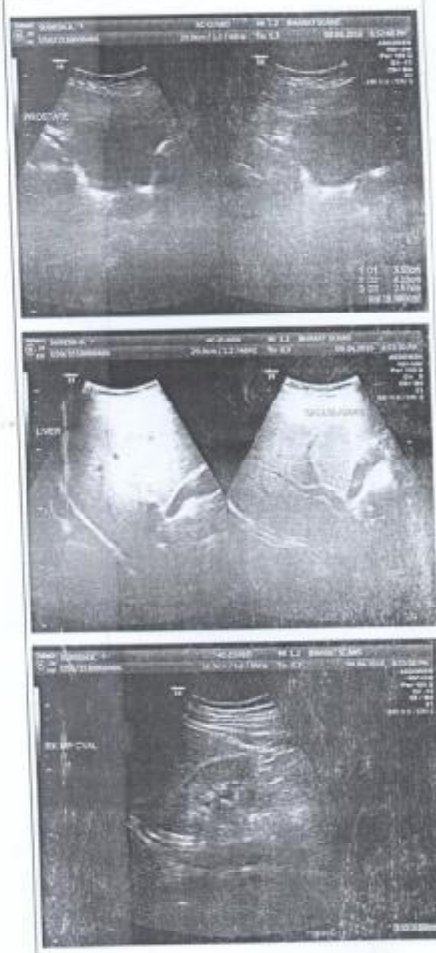
Gall Bladder
Gall bladder is partially distended.

Pancreas
Pancreas normal in size.
It shows uniform echotexture.
No evidence of calcification.

Spleen
Spleen appears normal in size.
It measures 91 mms.
It shows uniform echotexture.

Aorta
Aorta appears normal in calibre I.V.C. normal.
No significant retroperitoneal lymphadenopathy.
No free fluid in the peritoneal cavity.
Right iliac fossa scanning shows
no abnormal sonographic features.

Both Kidneys
Right Kidney measures 101 x 48 mm .
A calculus measuring ~ 3.5 mm
noted in the mid pole of right kidney
Left Kidney measures 105 x 64 mm
Normal cortical echoes.
Cortico medullary differentiation is maintained.
Pelvicalyceal systems on both sides appear normal.



Quality is our Image

Exp. at: ROYAPETTAH
197, Peters Road, Royapettah, Chennai - 14
98414 79790, 98410 92778
Ph : 044-45 555 555

ANNA NAGAR
AB-1 2nd Avenue, Anna Nagar, Chennai - 40.
Ph : 044-44 100 100
98410 59900

NANGANALLUR
19, Medavakkam Main Road, Vanuvampet, Chennai - 91.
Ph : 044-44 700 700
95510 71777

TAMBARAM
105, Madhuram Road, West Tambaram, Chennai - 45.
Ph : 044-44 900 900
98419 49507

ASHOK NAGAR
84, 1st Avenue, Chennai - 83.
Ph : 044-44 200 200
98410 46663

TIRUNELVELI
110, North Bye Pass Road, Vannarpetta, Tirunelveli - 03.
Ph : 0462 - 40 40000
72990 70008

BHARAT SCANS
Innovation at work

Patient name	Mr. SURESH.K	Age/Sex	33 Years / Male
Patient ID	USG/1516008486	Visit no	1
Referred by	Dr. NATIONAL INSTITUE OF SIDDHA	Visit date	08/04/2016

Bladder
Bladder normal in contour.
No abnormal intraluminal echoes.
Wall thickness appears normal.

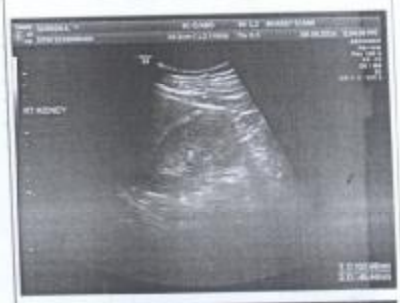
Prostate
Appears normal.
It measures 40 x 35 x 25 mm (Vol 18 ml).
No intravesical enlargement of prostate gland seen.
It shows uniform echotexture.

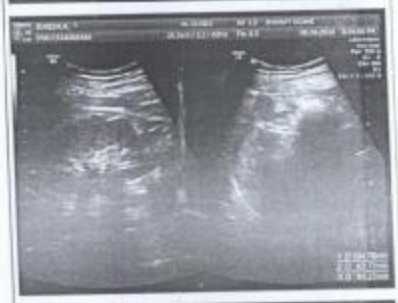
IMPRESSION:

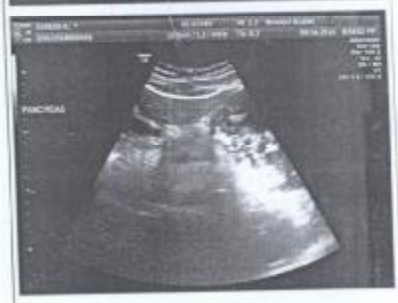
*** Right renal calculus.**

--Suggested clinical correlation .

DR.REENA YADAV.







Quality is our Image

Corp. off. ROYAPETTAH
197, Peters Road,
Royapettah, Chennai - 14.
98414 79700, 98410 97778
Ph : 044-45 555 555

ANNA NAGAR
AB-1 2nd Avenue,
Anna Nagar, Chennai - 40.
Ph : 044-44 100 100
98410 59900

NANGANALLUR
19, Madiwakkam Main Road,
Vanuvampet, Chennai - 91.
Ph : 044-44 700 700
95510 71777

TAMBARAM
105, Madichur Road,
West Tambaram, Chennai - 45.
Ph : 044-44 900 900
98419 49507

ASHOK NAGAR
84, 1st Avenue,
Chennai - 83.
Ph : 044-44 200 200
98410 46663

TIRUNELVELI
110, North Bye Pass Road,
Vannarpettai, Tirunelveli - 03.
Ph : 0462 - 40 40000
72990 76008

www.bharatscans.com

Name : Mrs. Pushpalatha. K	Date : 30.12.2015
Age : 34 Y / F	ID/AS/TBM/USG/ 63642
Ref.By.: Dr. Mariyappan.,	

USG Abdomen

Liver:
Is normal in size (15.0 cm) and shows uniform echo texture. Intrahepatic biliary radicles and CBD appear normal. Portal and hepatic veins appear normal.

Gall Bladder:
Is adequately distended. No calculus or internal echoes are seen.
Wall thickness is normal

Pancreas:
Appears normal in size and it shows uniform echo texture.

Spleen:
Is normal in size (10.3 cm) and uniform echogenicity.

Kidneys:
RT.Kidney measures 10.6 x 4.8 cms.
A calculus measuring 4.4 mm is seen in the mid pole of the right kidney.
LT.Kidney measures 10.2 x 4.8 cms.
Renal cortical echoes and Cortico medullary differentiation are normal on both sides. Pelvicalyceal system on both sides appears normal.

Bladder:
Is normal in contour. No intra luminal echoes are seen.

Name : Mrs. Pushpalatha. K	Date : 30.12.2015
Age : 34 Y / F	ID/AS/TBM/USG/ 63642
Ref.By.: Dr. Mariyappan.,	

USG Abdomen

Uterus:

Measures 7.2 x 4.6 x 4.1 cms. **Retroverted.**
Myometrium shows normal echogenicity.
Endometrium is regular and measures 5.3 mm.
No focal lesion is seen.

Ovaries:

Right ovary measures 2.5 x 2.5 cms.
Left ovary measures 2.3 x 1.9 cms.
The echogenicity is normal on both sides.

P.O.D:

P.O.D. is free.
No adnexal mass lesion seen.

Impression:

- **Right renal calculus.**
- **Other organs are normal.**

Radiologist /Sonologist.,

AKSHAY SCANS & LAB

Ph: 044-2241 3325 Mob : 88070 74004 Email: akshayscans@gmail.com

New # 177/Old # 295, G.S.T. Road,
Opp to Railway Station, Near Anna Statue,
Chromepet, Chennai - 44.

SPECIALITIES IN: ✣ ULTRASOUND ✣ COLOR DOPPLER ✣ ECHO ✣ ECG ✣ LAB ✣ Haematology ✣ Stool Clinical Pathology
✣ Thyroid Profile ✣ Microbiology ✣ Urine Clinical Pathology ✣ Liver Function Tests ✣ Immunology & Serology ✣ Master Health Checkup

(PCPNDT REG NO: PNA /5765/2012 , VALID UP To : 03/01/2018)

NAME : MRS.PUSHPALATHA	AGE & SEX : 35 YRS/FEMALE
DATE : 06/05/2016	REF BY : SELF

ULTRASOUND - WHOLE ABDOMEN

LIVER:
Liver is normal in size and echotexture. No focal or diffuse lesion seen. Intrahepatic biliary radicles appear normal. Common duct appears normal. Portal and hepatic veins appear normal.

GALL BLADDER:
Gall bladder is adequately distended. No abnormal intraluminal echoes / calculus seen. Wall thickness appears normal.

PANCREAS:
Pancreas appears normal in size. It shows uniform texture. Pancreatic duct is not dilated. No evidence of calcification.

SPLEEN:
Spleen appears normal in size and measures 9.6 cm. It shows uniform echotexture.

RIGHT KIDNEY:
Measures 12.7 x 4.2 cm. Normal in size, Shows normal cortical echoes. Cortico-medullary differentiation is maintained. No calculus seen. Pelvicalyceal system appears normal.

LEFT KIDNEY:
Measures 11.9 x 4.7 cm. Normal in size, Shows normal cortical echoes. Cortico-medullary differentiation is maintained. No calculus seen. Pelvicalyceal system appears normal.

URINARY BLADDER:
Bladder normal in contour. No abnormal intraluminal echoes. Wall thickness appears normal.

UTERUS:
Is anteverted, normal in size measuring 8.1 x 4.9 x 5 cm and shows homogenous myometrial echoes. No focal lesion seen. Endometrium appears normal, thickness measures 9.3 mm.

BOTH OVARIES :
Appears normal. No mass lesion seen.
RT ovary measures : 3.3 x 2.1 cm. LT ovary measures : 3.9 x 2 cm.

AORTA, IVC & RETROPERITONEUM:
Appears normal. No evidence of Lymphadenopathy.
No evidence of ascites seen.

IMPRESSION:

- **NORMAL STUDY OF ABDOMINAL AND PELVIC ORGANS.**

Dr. S. SARAVANAN,DMRD.,DNB.,
(RADIOLOGIST)

BIBLIOGRAPHY

BIBLIOGRAPHY

1. Agathiyarrathinachurukka naadi
2. Agathiyar gunavagadam
3. Agathiya naadi
4. Siddtha maruthuvam noi vilakkam
5. Sathaga naadi
6. Jeevaratchamirtham
7. Thirumoolar – 800
8. Theran karisal
9. Dhanvanthiri vaithiyam
10. Anubava vaithia deva ragasiyam
11. Yugi mamunivar vaithiya chinthamani – 800, Edition year- 1998
12. Dr.K.S.Uthamarayan, Siddhamaruthuvanga churukkam, 2nd edition- 1983
13. C.Kannusamiyam mudhaliyar, Aathmaratchamirtham ennum vaithiya saarasangiragam,1st Edition – 2011,page no:479
14. S.Kannusamiyam pillai, Sigicharathina deepam ennum vaithiya nool, Edition- 2007
15. Theraiyar neer kuri vaithiyam, Edition – 2000
16. K.S.Murukesa mudhaliyar, Gunapaadam – mooligai vaguppu, 2nd edition – 2002
17. K.Thiyagarajan, Gunapaadam – thathu jeevavaguppu, 2nd edition – 1968
18. Dr.M.Shanmugavelu, Noi naadal noi mudhal naadal thirattu, 1st edition-1967
19. S.Kannusmy pillai, Pathartha guna vilkkam, 4th edition-2006
20. T.pullaaiah, Encyclopedia of world medicinal plants, vol-1, 2,3,4print – 2006
21. Ram.P. Rastogi, Compendium of Indian medicinal plants, vol-1, 3 reprint – 2001
22. The wealth of india – raw materials, vol-1, 4: A-Ci, J-Q
23. Dr.K.S.Kuppusamy mudhaliyar, siddha maruthuvam pothu, 7th edition, 2007

24. K.S.Uthamarayan, siddhar aruvai maruthuvam, 4th edition, 2005

25. K.M.Natkarni, material medica, vol-1,3rd edition-1982

26. N. Kandhasamiyam pillai, History of siddha medicine, 2nd edition – 1998

27. T.V.Sambasivam pillai, Tamil and English dictionary

28. Angathipatham

29. K.Sembulingam, Essentials of Medical physiology, 4th edition – 2006

30. Guyton & hall, Text book of medical physiology, 11th edition

31. Harsh mohan, Text book of Pathology

32. Davidson's principles and practical of medicine, 20th edition

33. Baily and Love short practical surgery

34. R.Alagappan, Manual of practical medicine 4th edition

35. Harrison's principles of Internal medicine, 16th edition

36. www.medicine net.com

37. http://www.encyclo.co.ul/meaning –of- siddha% 20 medicine

38. urologycarectr.co...