Anti Spasmodic and Anti Histamine activities of SADAMANJIL Nardostachys Jatamansi & Anti Spasmodic and Anti Histamine activities of AMAIODU PARPAM

**Dissertation Subject**

For the partial fulfillment of the requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH II – GUNAPADAM

GOVERNMENT SIDDHA MEDICAL COLLEGE

(AFFILIATED TO THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI)

Tirunelveli – 627002

SEPTEMBER 2007
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Its my duty to place record of my profound send of gratitude and sincere appreciation to Lecturer Dr.S.Sulfin Nigar, M.D.(S), Post Graduate Department of Gunapadam, Government Siddha Medical College, Palayamkottai.

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The researcher extends her faithful thanks to her friends and colleagues.

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I would like to thank Selwyn Broad Band Net Cafe, Murugankurichi, Palayamkottai for their cooperation and commitment to bring out this work in an excellent format.

Finally I salute the greatest creator of this Universe the almighty who make everything possible.
INTRODUCTION

The Siddha system of medicine is one among the ancient system of the world evolved by siddhars, the spiritual scientists of Tamilnadu.

They have described the reality of nature and prescribed adequate guide lines for the safe human living with harmonious physical, physiological and psychological impact.

The three basic elements, by which the siddhars diagnosed the disease, are vatha, pitha and kapha which act as the back bone of this system of medicine. According to Siddhars, disease occurs in the body due to the alterations in these three basic elements.

After determining the disease, siddhars used to cure them initially with herbal preparations, then by minerals and metals.

Now siddha system has provided remedy for many chronic ailments which are very problematic in the modern world.

The author of this Dissertation has selected Vetpalai seeds Chooranam to try its efficacy on Azhal Keelvayu.
AIM AND OBJECTIVE

The aim of this dissertation is to establish that the drug “Vetpalai Seeds Chooranam” is effective in ‘Azhal Keel Vayu’ (Osteo arthiritis) through pharmacological studies and clinical trials.

In modern aspect, Azhal keel vayu has become a challenging problem to find out a permanent solution for this disease. In modern system of medicine analgesic and anti inflammatory drugs are used for such ailments, which produce side effects such as gastric irritation, nausea etc.,

Above problem urged the author to find a safe and easily available drug, which is not having any adverse effects.

Since no analysis has been made so far in ‘Vetpalai seeds’ for the disease ‘Azhal Keel Vayu’. So, the author has selected the drug to prove its efficacy on the same.

The Study is done in the following aspects.

1. Botanical Aspects
2. Gunapadam Aspects
3. Bio-chemical Analysis
4. Pharmacological Analysis
5. Clinical Assessment
A) Botanical Aspects of WRIGHTIA TINCTORIA

Botanical Name

Wrightia tinctoria (ROXB) R.Br

Synonyms

W.rothii

Classification

Class : Dicotyledonae
Sub – Class : Gamopetalae
Series : Heteromerae
order : Gentianales
Family : Apocynaceae

Vernacular Names

Tamil : Vetpalai, Irumpalai, Thonthapalai
Sans : Indrayava
Eng : Pala indigo plant
Tel : Kodisha
Mal : Kota Kappalla
Hind : Mitta. Indrajava
Duk : Inderjaw Sheereen
Ben : Indrajan
Guj : Indran jau, Runchallodudhlo
Kan : Kodamurki, Bepalle, Kodesige
Trade Name : Pala Indigo Plant

**Habitat:**

Small tree, deciduous tree, plants found in all forest districts in deciduous forest, especially in the Decan, less so in the Circars and Western ghats up to 4000 ft in the hills.

**Leaves:**

Entire margin, glabrous, Puberulous beneath, tomentose, simple, opposite, petiolate, shape – elliptic ovate or oblong, acuminate or caudate. It yields a blue dye.

**Flowers:**

White, regular, actinomorphic, complete, pentamerous

**Calyx:**

Five, gamosepalous, short, five lobed with glands or scales within.

**Corolla:**

5 petals, gamopetalous, hairs, salver shaped, tube usually short, cylindric, throat with a corona in 1-2 series of erect. Simple lobed or fimbriate scales, distinct or united, in a ring, lobes overlapping to the left.
**Androecium:**

5 stamens, inserted on the mouth of the tube, filaments short dilated, anthers exert, sagittate, connivant around and adhering to the stigma, cells spurred at the base.

**Disc:**

Absent

**Gynoecium:**

2 Carpels, ovary superior, free in region of ovary but united near style and stigma – ovules many anatropous, pendulous. Stigma ovoid, usually toothed basal ring.

**Fruit:**

Two narrow follicles joined at the tips and with a long coma of the seeds at the base.

**Seeds:**

Linear, attenuate at the apex base with a deciduous coma. Albumen scanty or absent, Cotyledons broad, convolute, radicle short, superior.

**Seeds - uses:**

The seeds have aphrodisiac, antiflatulent and anthelmintic properties. They are used to cure Pitta, Vayu diseases, rakta athisaram, kudal Vriddi.
The seeds yield a deep red semi-drying oil (yield, 30.5%; d\textsubscript{248} 0.955) with following fatty acid composition.

<table>
<thead>
<tr>
<th>Fatty Acid</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linoleic</td>
<td>31.8%</td>
</tr>
<tr>
<td>Oleic</td>
<td>34.0%</td>
</tr>
<tr>
<td>Myristic</td>
<td>0.1%</td>
</tr>
<tr>
<td>Palmitic</td>
<td>8.7%</td>
</tr>
<tr>
<td>Stearic</td>
<td>18.2%</td>
</tr>
<tr>
<td>Arachidic</td>
<td>5.8%</td>
</tr>
</tbody>
</table>

Unsaponifiable matter – 1.42% consisted mostly of sitostreol.

The pods without seeds contained

- β - Sitosterol
- α - Amyrin

ursolic and oleonolic acids.

- The Wealth of India – Raw materials Vol - X
- Medicinal Plants of India Vol – II, Pullaiah
- Flora of Coorg (Kodagu), K.R.Keshava Murthy & S.N Yoga Narashimhan
- Taxonomy of angiosperms, B.P.Pandey
- Glossary of Indian Medicinal Plants, R.N.Chopra
B) GUNAPADAM ASPECT

Guna: Vasana
Rasa: Astringent
Vriddhi: Tonic
Nrti: Nutrient
Rasa Sambhava: Stomachic

Vlg: Tonic, Balsam

- Astringent
- Tonic
- Nutrient
- Febrifuge
- Stomachic
பிறகு

“நூற்றாண்டு காலநிலைகள் புதுப் பக்தத்தில்
வல்லுனர் குறுக்கு சுருக்கம் - 2
காரணம் வங்காளார் கைவாள் காரணமாக
பாத்திரம் பாதுகாப்பான பொழுது”

காட்சியில், சிறுகிராம் வங்கியானது, காலம், நூற்றாண்டு பக்தான்
வேறுபாடுக்கு, மேம்பாடு வரவில் அடிப்படையில் வரும்.

- «, ஈட்கால் மண்டல, பொழுது

வரும்

“அரசியல் வாழ்க்கைத் தெளிவுகள் வாழ்க்கைத் தெளிவுகள்
தம்பரு என் தம்பரு அம்மணி- பாலமணி
வாழ்க்கை குறுக்கு வாழ்க்கை தாட்சியிலிருந்து
வல்லுனர் நூற்றாண்டு வாழ்க்கை திண்டு”

ஆலது, பின்னணிகுறுவான வல்லுனர், மேம்பாடு, பின்னணிகுறுவான விளகு.

- ஈட்கால் மண்டல, பொழுது

வல்லுனர் அதிக விளகு பாதுகாப்பான

1. வரு வாழ்க்கைக்குறுவான விளகு
   - காலம் வாழ்க்கை வாழ்க்கை, பக்கம் - 32

2. வரு வாழ்க்கை வாழ்க்கைக்குறுவான விளகு
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6. தமிழகம், வெள்ளை, மாநில புல்லி தொகுதி தின்நடுக்கு செல்லும் பால்குழுப்பாடு
   - வேலைக்குறிக்கு வல்லியல் பிரிவு வகுப்பு
7. தற்கொலைக்குறிக்கு கூழ் நிறுவனம்
   - வேலைக்குறிக்கு வல்லியல் பிரிவு வகுப்பு பக்கம் - 215
8. வேலைக்குறிக்கு வல்லியல் கால்பாகம்
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9. வேலைக்குறிக்கு கால்பாகம்
   - விளையாட்டு செய்திக் கால்பாகம் கால்பாகம்
     - வல்லியல் வேலை குறிப்பிட்டல் (சிடூன்றார் பாகம்) பக்கம் - 38
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      முதன்மை கால்பாகம் பக்கம் - 49
MATERIALS AND METHODS

Drug Selection:

In this dissertation, Vetpalai seeds was taken as single drug study and used in "Azhal Keel Vayu".

Collection of Vetpalai Seeds:

The Seeds was collected from raw drug stores at town.

Purification of Vetpalai Seeds:

Vetpalai seeds was purified by removing unwanted particles.

Preparation of Vetpalai Seeds Chooranam:

The purified seeds was made into fine powder form (Chooranam), Then it was filtered by white cloth (Vasthirakayam) and preserved.

Purification of Chooranam:

A clay pot was taken and it was filled with equal parts of milk and water. A cloth was tied around the mouth of the pot. The prepared Chooranam was placed over the cloth and then it was covered with another clay pot. The gap was covered with another cloth. This was kept on the fire until the milk level considerably decreased. Then the choornam was taken out, dried and powdered.

Route of Administration:

Enteral

Dosage:

One gram thrice a day with water after meals.
BIO – CHEMICAL ANALYSIS

Preparation of the extract:

5 gram of choornam was weighed accurately and placed in a 250 ml clean beaker. Then 50 ml distilled water was added and dissolved well. Then it was boiled well for about 10 minutes. It was cooled and filtered in a 100 ml volumetric flask and then it was made up to 100ml with distilled water. This fluid was taken for analysis.

QUALITATIVE ANALYSIS

<table>
<thead>
<tr>
<th>S.NO</th>
<th>EXPERIMENT</th>
<th>OBSERVATION</th>
<th>INERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>TEST FOR CALCIUM</td>
<td>A White precipitate</td>
<td>Indicates the presence of calcium</td>
</tr>
<tr>
<td></td>
<td>2ml of the above prepared extract was taken in a clean test tube. And 2 ml of 4% Ammonium oxalate solution was added to it.</td>
<td>formed</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>TEST FOR SULPHATE:</td>
<td>A white precipitate</td>
<td>Indicates the presence of sulphate</td>
</tr>
<tr>
<td></td>
<td>2ml of the extract was added to 5% barium chloride solution.</td>
<td>was formed</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>TEST FOR CHLORIDE</td>
<td>A white precipitate</td>
<td>Indicates the presence of chloride</td>
</tr>
<tr>
<td></td>
<td>The extract was treated with silver nitrate solution</td>
<td>was formed</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TEST FOR CARBONATE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4</td>
<td>The substance was treated with concentrated HCL.</td>
<td>No brisk effervescence was formed</td>
<td>Absence Of Carbonate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>TEST FOR STARCH</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>The extract was added with weak iodine solution.</td>
<td>No blue colour was formed</td>
<td>Absence of starch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>TEST FOR IRON</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>FERRIC: the extract was treated with glacial acetic acid and potassium Ferrocyanide.</td>
<td>No blue colour was formed</td>
<td>Absence of ferric iron</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>TEST OF IRON</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>FERROUS: The extract was treated with concentrated nitric acid and ammonium thiocyanate.</td>
<td>Blood red colour was formed</td>
<td>Indicates the presence of ferrous Iron</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>TEST FOR PHOSPHATE</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>The extract was treated with ammonium Molybdate and concentrated nitric acid.</td>
<td>No yellow precipitate was formed</td>
<td>Absence of phosphate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>TEST FOR ALBUMIN</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>The extract was treated with Esbach’s reagent.</td>
<td>No yellow precipitate was formed</td>
<td>Absence of Albumin</td>
</tr>
<tr>
<td></td>
<td><strong>TEST FOR TANNIC ACID</strong></td>
<td>No blue black precipitate was formed</td>
<td>Absence of Tannic acid</td>
</tr>
<tr>
<td>---</td>
<td>------------------------</td>
<td>-------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>10.</td>
<td>The extract was treated with Ferric chloride.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td><strong>TEST FOR UNSATURATION</strong></td>
<td>It does not get decolourised</td>
<td>Absence of Unsaturated compound</td>
</tr>
<tr>
<td></td>
<td>Potassium permanganate solution was added to the extract.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td><strong>TEST FOR THE REDUCING SUGAR</strong></td>
<td>No colour change occurred</td>
<td>Absence of Reducing Sugar</td>
</tr>
<tr>
<td></td>
<td>5ml of Benedict’s qualitative solution was taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boiled for 2 mts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td><strong>TEST FOR AMINO ACID:</strong></td>
<td>Violet colour was formed</td>
<td>Indicates the presence of Amino acid</td>
</tr>
<tr>
<td></td>
<td>One or two drops of the extract was placed on a filter paper and dried well</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>After drying 1% Ninhydrin was sprayed over the same and dried it well</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PHARMACOLOGICAL STUDIES
ANALGESIC STUDY OF VETPALAI SEEDS CHOORANAM BY TAIL FLICK METHOD

Introduction:

According to Siddha medicine texts the vetpalai Seeds chooranam is indicated in vatha diseases. From this indication, the drug vetpalai seeds chooranam might possess analgesic activity.

Aim:

To study the analgesic effect of Vetpalai Seeds chooranam on albino rats by tail flick method.

Materials and Methods:

Preparation of Test Drug:

1 gm of Vetpalai seeds Chooranam was suspended in 10ml of hot water as suspending agent. This 1 ml contained 100mg of the test drug.

Equipment:

Hot water bath

Procedure:

Six male albino rats (weighing 80-100 gms) were used in three groups. The animals were allowed free to access food and water until they
were brought for the experiment. The animals which showed the positive response to the stimulus within a given time were selected for the study.

After the selection of animals which were responding to stimulus within 2 seconds, they were divided into 3 groups, each group consisting of 2 rats.

The hot water was maintained at 55°C. The tip of the tail was immersed into the water bath and the time was noted when the rat flicked the tail.

First group was given the Vetpalai Seeds Chooranam at a dose of 100mg / 100gm body weight of the animal.

Second group was administered with Paracetamol at a dose of 20mg /100gm of body weight. Third group was given 1 ml of water and kept as control.

After the drug administration, the reaction time of each rat after ½ an hour, 1 hour and 1½ hour were noted in each group (When a rat fails to flick the tail, it should not be continued beyond 8 seconds to avoid injury) and the average was calculated.

The results of control group, Standard group and drug treated group were tabulated and compared.
### Study of analgesic action by Tail Flick Method using Hot water Bath method using the drug of vetpalai seeds chooranam

<table>
<thead>
<tr>
<th>Serial No</th>
<th>Name of Drugs / Groups</th>
<th>Dose / 100 gm body weight</th>
<th>Initial Reading</th>
<th>After Drug Administration</th>
<th>Mean Difference</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Vetpalai seeds chooranam</td>
<td>100mg /1ml</td>
<td>2.5 sec</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5sec</td>
</tr>
<tr>
<td>2.</td>
<td>Paracetamol</td>
<td>20mg/ml</td>
<td>3.0 sec</td>
<td>4.0</td>
<td>5.0</td>
<td>6.5sec</td>
</tr>
<tr>
<td>3.</td>
<td>Water</td>
<td>1ml</td>
<td>2.5sec</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5sec</td>
</tr>
</tbody>
</table>

**Inference**

The test drug Vetpalai seeds chooranam has mild analgesic activity.
ANTI – INFLAMMATORY STUDIES

ACUTE ANTI – INFLAMMATORY STUDIES

Carrageenin induced Hind paw Oedema Method

Introduction

In Siddha texts, Vetpalai seeds chooranam is indicated in the condition of Vatha disease. So following pharmacological studies have been done.

Method

Carrageenin induced Hind paw oedema method in albino rats.

Aim

To evaluate the acute anti – inflammatory effect of Vetpalai seeds chooranam by Carrageenin induced oedema method in albino rats

Drug preparation

1gm of Vetpalai seeds chooranam was suspended in 10ml of hot water. Hot water was added for dissolving the test drug. This 1ml contained 100mg of the test drug.

Procedure

Six healthy albino rats of either sex weighing between 80 -100gm were selected. The volume of each hind paw was measured by using the mercury plethysmograph.
After the measurement of hind paw of all the rats, they were divided into three groups, each group containing two rats.

First group was given test drug Vetpalai seeds chooranam at a dose of 100mg /100gm body weight of the animal. The second group was given Ibu brufen 20mg / 100gm of body weight and the third group was kept as control by giving distilled water of 1ml/100gm of body weight.

All animals were given 0.1ml of 1 % (W/v) of carageenin suspension which was injected subcutaneously in the plantar surface of hind paw of rats.

Three hours after carrageenin injection, the hind paw volume was measured, from the differences in the initial and final hind paw volume; the degree of the inflammation was calculated by taking the volume in the untreated control group as 100%

The percentage of inflammation of the other group was calculated from the degree of the anti - inflammatory effect of the treated and the test groups were calculated.
Study of Acute Anti – Inflammatory by Carrageenin induced hind paw oedema method using Plethysmograph using the drug of Vetpalai seeds chooranam

<table>
<thead>
<tr>
<th>Serial No</th>
<th>Name of Drugs / Groups</th>
<th>Dose /100gm body weight</th>
<th>Initial Reading average</th>
<th>Final reading average</th>
<th>Mean Difference</th>
<th>Percentage inflammation</th>
<th>Percentage inhibition</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vetpalai seeds chooranam</td>
<td>100mg /1ml</td>
<td>0.8</td>
<td>1.1</td>
<td>0.3</td>
<td>31.5</td>
<td>62.5</td>
<td>Significant Action</td>
</tr>
<tr>
<td>2</td>
<td>Ibu Brufen</td>
<td>20mg/ml</td>
<td>0.8</td>
<td>0.85</td>
<td>0.05</td>
<td>6.25</td>
<td>93.75</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>Water</td>
<td>1ml</td>
<td>0.6</td>
<td>1.5</td>
<td>0.80</td>
<td>100.00</td>
<td>-</td>
<td>No.</td>
</tr>
</tbody>
</table>

**Inference**

The test drug vetpalai seeds chooranam has significant activity.
Aim:

Chronic anti-inflammatory effects of Vetpalai seeds chooranam.

Drug preparation:

1 gm of vetpalai seeds chooranam was suspended in 10ml of hot water. Hot water was added for dissolving the test drug.

Procedure:

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

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

On the day of the experiment, each rat was anaesthetised with Ether to implant 10mgm of sterilized cotton pellets subcutaneously in the lower abdomen (Groin) of two on each side, after making suitable incision and sutured carefully.
The first groups of animals were given the test drug, vetpalai seeds chooranam in a dose of 100mg/100gm of body weight. The second group was given Ibu – brufen at a dose of 20mg / 100gm body weight. The third group was kept as control group by giving distilled water of 1ml / 100gm of body weight. On the 8th day of the experiment, all the rats were sacrificed and cotton pellets surrounded by granulation tissues were removed and dried in Hot air oven at 55°C - 60°C

The concordant weight of granuloma for control group and treated group gives an estimation of degree of inhibitory activity of test drug.
Study of Chronic Anti-inflammatory effect by Cotton Pellet method using the Drugs of Vetpalai seeds Chooranam

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of Drugs / Groups</th>
<th>Dose / 100 gm body weight</th>
<th>Pellet weight</th>
<th>Pellet weight of the Granuloma of drugs</th>
<th>Mean difference</th>
<th>Percentage inflammation</th>
<th>Percentage inhibition</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Vetpalai seeds chooranam</td>
<td>100mg /1ml</td>
<td>10mg</td>
<td>99</td>
<td>-</td>
<td>40</td>
<td>60</td>
<td>Significant action</td>
</tr>
<tr>
<td>2.</td>
<td>Ibu Brufen</td>
<td>20mg/ml</td>
<td>10mg</td>
<td>56mg</td>
<td>-</td>
<td>22.4</td>
<td>77.6</td>
<td>Good</td>
</tr>
<tr>
<td>3.</td>
<td>Water</td>
<td>1ml</td>
<td>10mg</td>
<td>250mg</td>
<td>-</td>
<td>100.0</td>
<td>-</td>
<td>No.</td>
</tr>
</tbody>
</table>

**Inference**

The test drug has got significant action when compared with that of the standard drug
ANTI-PYRETIC ACTIVITY ON ALBINO RATS

By

BEWER YEAST METHOD

Aim:

To study the anti-pyretic activity of vetpalai seeds chooranam.

Procedure:

Six albino rats were selected each weighing about 100 -150gm and divided into 3 groups, 2 rats in each group. All rats were made hyperthermic by subcutaneous injection of 12% suspension of yeast at a dose of 1ml/100gm of body weight 10 hours later, the first group was given test drug orally at a dose of 100mg/100gm body weight, second group was given paracetamol 20mg/100gm of body weight. The third group was given distilled water orally at a dose of 1ml water.

The mean rectal temperature for the 3 groups were recorded at 0 hour, 1.30 hours, 3 hours and 4.30 hours after the administration of drugs.

The difference between the mean temperature of the control group, the standard group and that of drug group was calculated and tabulated.
## Study of Anti pyretic by yeast induced method using the drugs of Vetpalai seeds chooranam

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Name of Drug / Groups</th>
<th>Dose / 100 gm body weight</th>
<th>Initial Temperature in centigrade</th>
<th>After Drug Administration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 ½ hour / 3.0 hour / 4 ½ hour</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Vetpalai seeds chooranam (3 Rats Average)</td>
<td>100mg/1ml</td>
<td>37.0°C</td>
<td>37.0 / 36.5 / 36.0</td>
<td>Mild</td>
</tr>
<tr>
<td>2.</td>
<td>Paracetamol</td>
<td>20mg / 1ml</td>
<td>36.5°C</td>
<td>35.5 / 35.0 / 34.0</td>
<td>Good</td>
</tr>
<tr>
<td>3.</td>
<td>Water</td>
<td>1 ml</td>
<td>36.5°C</td>
<td>36.5 / 37.5 / 38.5</td>
<td>No</td>
</tr>
</tbody>
</table>

**Inference:**

The test drug vetpalai seeds chooranam has mild anti pyretic action.
CLINICAL ASSESMENT

Azhal Keel Vayu is a disease mainly affecting the major weight bearing joints. This type of arthritis produce Socio – economic problems in human beings.

The main changes of joints are wear and tear process in the components of the joints producing pain, swelling, tenderness and limitation of movements.

There is no specific curative to restore the change in the joints.

In siddha literatures 10 types of Keelvayu have been recognized. The author of this dissertation has selected Azhal Keel Vayu. Azhal Keel Vayu is characterised by pain and swelling of the major joints, difficulty in walking, crepitations of the joints etc. It may be roughly compared with osteo arthritis for the clinical efficacy of vetpalai seeds chooranam. For all these cases, full clinical datas were recorded and they were diagnosed on the basis of siddha basic principles.

In order to assess the efficacy of vetpalai seeds chooranam for Azhal keelvayu, it was tried clinically on 10 in patients and 30 out patients in Department of Gunapadam, Government Siddha Medical College Hospital, Palayamkottai. Patients of both sexes were selected for clinical trials.
The patients selected for clinical trial had the following criteria

1. Above 40 years
2. Pain
3. Swelling measurement of the knee joint is noted
4. Stiffness
5. Limitation of the movements
6. Joint tenderness
7. Crepitation of the joints
8. The routine investigations
   a. Total white blood cell count
   b. Differential count
   c. Erythrocyte sedimentation rate
   d. Haemoglobin estimation
   e. Blood sugar
   f. Blood urea
   g. Serum cholesterol and
   h. Urine – Albumin, Sugar, Deposit
9. Radiological investigations helps in both diagnosis of
   a. Narrowing of joint space
   b. Osteophytes
   c. Subchondral cyst
   d. Subchondral sclerosis

The signs and symptoms vary in its severity from patient to patient
Excluding criteria

Sudden onset of excruciating pain, marked swelling and redness of the big toe

- Younger age group
- Migrating joint pain
- Evening rise of temperature, Loss of weight
- Haemorrhagic effusion.

Line of Treatment

Vetpalai seeds chooranam was administered 1gm; three times a day with hot water after meals to each case for 20 – 40 days. The division of treatment varied according to the severity of signs and symptoms.

Diet restriction and medical advice:

1. The patients were advised to take easily digestable and highly nutritive foods.
2. They were advised to avoid food like potato, curd, dhal etc. This would increase the Vayu kutram.
3. Advised to avoid cold damp climate.
4. Obese patient were advised to reduce their weight in order to avoid stress.
5. To avoid stress, walking is reduced; if they walk they are advised to the stick for support.
**Exercise for Strengthening Muscles around the knee joint**

Simple exercise that promote flexibility and strengthen the muscles around the knee can go long way towards warding off problems. In many cases, these exercise can also help hasten recovery after a knee injury. Weak or tight muscles are an important cause of knee injuries.

Hence, it is advisable to make the time and effort to strengthen the muscle around the knee. However, if one is already suffering from pain in the knee, these exercises should be performed after consulting a doctor. To derive maximum benefit from the following exercise, they should be performed once or twice a day, repeating every exercise five to ten times for each knee.

**Thigh Firmer:**

Sit on the edge of a chair with one leg stretched out in front and the heel resting on the floor; tighten the muscle that runs across in front of the knee by flexing the toes back. Simultaneously, push the back of the knee

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towards the floor and feel the stretch there as well as at the back of the ankle. Hold for 5 seconds. Repeat the same with the other leg.

**Knee flexion and extension:**

![Diagram of knee flexion and extension]

Sit straight on chair and bend the knee by pulling heel under the chair. Rest the foot on the toes. Hold for 5 seconds. Keep the foot relaxed and slowly raise it up to straighten the knee. Hold for 5 seconds and then slowly lower the foot to the floor. Repeat the same with the other leg.

**Straight Leg lift:**

![Diagram of straight leg lift]

Lie flat on the back with the stomach pulled in, the knee of one leg bent and the foot flat on the floor. Extend the other leg and lift it slowly as far as is comfortably possible, without bending the knee. Hold for 5 seconds and slowly lower the leg. Repeat the same with the other leg.
**Response**

In the clinical trials done for 40 patients, good response was obtained for 80%, optimum fair response for 15% and poor response for 5% of cases.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Response</th>
<th>No. of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Good</td>
<td>32</td>
<td>80</td>
</tr>
<tr>
<td>2.</td>
<td>Fair</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>3.</td>
<td>Poor</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>
DISCUSSION

In this dissertation the efficacy of the drug namely vetpalai seeds powder in the treatment of Azhal keel vayu is being evaluated. In our ancient system of medicine, i.e., siddha system of medicine, the disease causing agents were due to derangements of three thoshas (Vatham, pitham and kapham). Three thoshas i.e three humors have been classified on the basis of five elements (Earth, Water, Fire, Air and Ether). Derangement of three thoshas is due to increase or decrease of five elements. Taste is due to the mixture of five elements only. The drug vetpalai seeds chooranam was chosen on the basis of its taste and a mixture of elements based on panchaboothic concept.

On the pathological basis of siddha medicine, taste has been classified into 6 types. Of these, sweet, bitter and astringent are classified into Seetha Veerium.

Disease Azhal keel vayu is caused due to the aggravation (increase) of pitha; by means of increasing pitha it also deteriorates and disturbs vatha. By decreasing pitha, three thosha can easily be brought down into normal state. On the same classification of taste, Vetpalai seeds have seetha verium. By means of administration of the seetha veerium, Vetpalai drugs it surely brings the pitham into normal condition.
Here the adjuvent hot water also has the tendency to bring the pitham to normal condition. By means of administration of drug, Vetpalai Seeds choorarnam with the adjuvent hot water the disease Azhal keel vayu can be easily managed.

With the help of bio-chemical analysis the presence of calcium, chloride, sulphaht, ferrous iron and amino acid in the drug is confirmed.

The presence of calcium is a significant factor, because physiologically it is necessary for bone formation and it has regulatory effect of neuro muscular irritability, here by reducing pain. Apart from these, the daily requirement of calcium is also somewhat met by the patients.

The pharmacological studies of the drug has got mild analgesic, significant acute anti-inflammatory, significant chronic anti inflammatory and mild antipyretic actions.

In our clinical studies, no adverse reactions were reported during the administration of this drug.

About 40 patients with Azhal keel vayu were taken in this study.

Among them,

- Good response: 80%
- Moderate response: 15%
- Poor response: 5%
SUMMARY

The drug vetpalai seeds chooranam (wrightia tinctoria was taken for the study to establish its anti-inflammatory, analgesic and anti-pyretic efficacy in Azhal keel vayu.

The literatures were collected from various text books. The author has an idea about the identification, collection, botanical aspects, gunapadam aspects of vetpalai seeds and its effect in ‘Azhal Keel Vayu’

The chemical analysis of the drug was done in the bio-chemistry laboratory in Govt. Siddha Medical College, palayamkottai. The analytic report confirms that the drug contains calcium, chloride, sulphate, ferrous iron, aminoacid.

The pharmacological analysis was done in pharmacology department of Govt. Siddha medical college, palayamkottai.

The analysis established that the drug has got mild analgesic, significant acute anti-inflammatory, significant chronic anti-inflammatory and mild antipyretic effects.

The clinical studies showed that the drug has got good response in Azhal keel vayu and investigation reports proved the results. During the clinical trial, it was inferred that the drug had no adverse effects.
CONCLUSION

It is concluded that the trial drug vetpalai seeds has mild analgesic activity, significant acute anti inflammatory, significant chronic anti inflammatory and mild anti pyretic activity. Clinically it is effective in Azhal keel Vayu without carrying any adverse effects.
INTRODUCTION

In Siddha system of medicine, not only the plant but metal, mineral and animal origins are utilized.

According to siddha concept, one can infer the ancient siddha scientist the well knownledged chemist.

‘Rasavatham’ is our ancient siddha chemistry which expresses upgrading of low grade metal into highgrade metal. This ‘Rasavatham’ (Indian alchemy) which was also practised in ancient Arabia, Africa, Europe, china and India

In Siddha way of treatment it is said, first give priority to herbal products then metal and mineral compounds. The following siddhars concept expresses this well

“செந்திரங்களை நீதிக்கிறத்து பெண்பாலை விதிக்கும் பேராலை போதும்”

The metals and minerals preparation, such as parpam, Chenthooram, Kattu, kalangu are all excellent and effective remedy for chronic diseases, the challenge faced by present modern world.

Apart from their therapeutic efficacy in minute doses, these remedies were found to be very effective for preservation and promotion of positive health and prevent the diseases as ‘Kayakalpam’
AIM AND OBJECTIVE

The siddha system of medicine is becoming popular for its efficacy in chronic diseases. Nowadays eventhough, an advanced theoretical and practical achievements have been established, the mankind is in need of some proper solutions to various medical problems. The lifestyle and environment have been changed to greater extent which may lead to many unwanted and critical maladies.

Among them, the most commonest problem in adults and geriatrics is keel vayu (arthritis) which is an inflammatory disease of joints. The arthritis especially in geriatrics which is degenerative in nature called Azhal keel vayu (osteo arthritis) has no proper curative methods in this modern world.

The progressive prevalence of Azhal keel vayu is directly proportional to the age.

In Radiological survey, people less than 45 years of age have only 2% of Azhal keel vayu, between the age of 45 to 64 years the prevalence is 30% and above the age of 65 years it is 68%

Finally the author has selected the Vedantha bairava mathirai [Koshaee anuboga vaidya Brahma Ragasium Page – 70] which is
indicated specially for Azhal Keel Vayu. It is prepared from Lingam, Venkaram, Thippili and Karunabi.

So the author for his dissertation work has selected ‘Vedantha bairava mathirai’ and studied its efficacy in Azhal Keel Vayu.
REVIEW OF LITERATURES

(A) GUNAPADAM ASPECT

Vernacular Names

<table>
<thead>
<tr>
<th>Language</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tamil</td>
<td>Lingam</td>
</tr>
<tr>
<td>Eng</td>
<td>Cinnabar</td>
</tr>
<tr>
<td>Tel</td>
<td>Ingileekam</td>
</tr>
<tr>
<td>Can &amp; Kong</td>
<td>Ingilika</td>
</tr>
<tr>
<td>Malayal</td>
<td>Chayilyam</td>
</tr>
<tr>
<td>Urdu</td>
<td>Singraff</td>
</tr>
</tbody>
</table>
திறன்கள் இலக்கியம்:

திறன்களான தேசியச் சட்டமன்றம் போர்ப்பர் குழுமம், சேவீஸ் போர்ப்பர் குழுமம் சேவீஸ் போர்ப்பர் குழுமம் வெளிக்கேற்ப சேவீஸ் போர்ப்பர் குழுமம் அமைப்பிகளின் ராணுவாக விளக்கி வேண்டும்.

"பார்சை பிள்ளை பார்சை கோட்டை"

- சேவீஸ் அமைப்பிகள் திறன்களான தேசியச் சட்டமன்றம் போர்ப்பர் குழுமம் அமைப்பிகள்.

"கள்ளக்கார் கருவியே கியூ கியூ" "கருவியே கருவியே கியூ கியூ" சேவீஸ் அமைப்பிகள் திறன்களான பார்சை பார்சை கோட்டை அமைப்பிகள்.

பார்சை பார்சை:

"திறன்கள் என் பார்சை பார்சை செய்ய வேண்டும்
கழகும் காலத்து கருவியே பூட்டு - ஒசைக்
அமைப்பிகள் சலாமா பூட்டு பூட்டு
அமைப்பிகள் சலாமா பூட்டு பூட்டு பூட்டு பூட்டு

"திறன்கள் போர்ப்பர் குழுமம் 
சேவீஸ் சேவீஸ் போர்ப்பர் குழுமம் அமைப்பிகள்
சேவீஸ் சேவீஸ் போர்ப்பர் குழுமம் அமைப்பிகள்
சேவீஸ் சேவீஸ் போர்ப்பர் குழுமம் அமைப்பிகள்

- வி. கே. கே. கே. கே. கே.

கருவியே கருவியே கருவியே கருவியே கருவியே 
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கருவியே கருவியே 
கருவியே கருவியே 
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கருவியே 
கருவியே
"இன்னும் வெள்ளாடு பிள்ளை மின்னாக கிளைந்து
சவுக்காச கடவ வார தாவரக்கூடம் - மாதிரியார்
சாதைநீர் கிட்டிரா காந்திரா குருதிகள்
தான் வெளுத்து சுருக்க.

"இன்னும் வெள்ளாடு பிள்ளை - பிள்ளையில் புகு துப்புப்பக்கிணி மலர் உண்மையான தொப்பிள்ளை. அப்படி புகு துப்புப்பக்கிணி புகு உண்மையான "சிங்கராயில் குதினராயில் குதிலியே
தான் வெளுத்து சுருக்க.

"இலங்கைச் சில விளக்கத்து வழங்கல் விளக்கம்" சாதாராக நெறிக்குறிப்பு சிலிக்கம்
தீக்க ரவுவும் வெளிர்ப்பக்கும் வெளியும் புரோட்டா ரவுவும் காட்டுபெற்றது.

சுல்லி - மாதிரியம், மேற்புறம் விளக்கம்

சிற்றி - தாம்பர

- காலம்மா கரு துளை பூண்பந்தரம் - 201

கலை : Acrid, bitter

அகர்ந்து : Indian Indigenous drugs and plants பக்கம் 680

Physical characters:

- காளாக்கல் தூப்பு
- புதுன்ளிபள் புதுக்கால் தூப்பு
- சிற்றிய தூப்பந்தர தூப்பு
விளையாட்டு:

1. வலம் தெளிவாக - Alternative
2. வலம்பரப்பு - Febrifuge
3. வலம்பரப்பு நிலைக்கு - Antisyphilitic
4. வலம்பரப்பு - Tonic

காசியை வழிபட்டல்:

1. புல்கருந்து, பசுமைக்கு, வெளிப்படையானிடும் குச்சிகளை கூடுதல் திறனிடையே குறைக்குவது
2. கருப்பணிமையுடன், கருப்பணிமை புழக்க நடனம் வழங்குகின்ற தரவாதார பார்வையும் இணைந்து வருங்கும்
3. அல்மிகளை பாட்டு வரும் விளக்கனவர் இல்லாதது பார்வைக்கு காரணமாக விளக்கந்த பார்வையை கண்காண்பது, வீதமாக இதற்கு வரும் விளக்கனவர் இல்லாதது பார்வைக்கு கண்காண்பது அயனியாரின் விளக்கந்த பார்வையை எடுத்து வருங்காக புத பொருள் வாக்குக்கு, வருகையும் வளர்வுக்கு, புருங்கண்டு பார்வைக்கு வளர்வுக்கு, காரணின் விளக்கன்று வருகையும் வாக்குக்கு

- நிறைவு ¾ இடை முறை

திருவியாக்கக்கூறு குறிப்பிட்டு:

1. முதல் விளையாட்டு:
   - திருச்சம் - 320 கிராமம்
   - காற்ற குறிப்பிட்டு - 100 கிராமம்

2. முதல் விளையாட்டு:
   - திருச்சம் - 12 பாம்பை
   - காற்ற குறிப்பிட்டு - 8 பாம்பை
3. பார்வாக்க விளக்கம்

திறன் - 1 பந்தை
ஒக்கதை பார்வாக்கம் - 1 பந்தை விளக்கிவைத்து

4. பார்வாக்க விளக்கம் (அடுத்து) விளக்கிவைத்து

திறன் - 7 பந்தை
குறுக்கு - 2 பந்தை விளக்கிவைத்து

காமராத்துறை:

காஞ்சி பொருளாதார விளக்கம் 8, காமராத்துறை 2, ளோப்பேர் விளக்கம் 2 பந்தை விளக்கிவைத்து
காமராத்துறை 1 காஞ்சி பொருளாதார விளக்கம் காஞ்சி பொருளாதார விளக்கிவைத்து 6 பந்தை விளக்கிவைத்து காஞ்சி பொருளாதார விளக்கிவைத்து.

- வேறுபாட்டு காஞ்சி விளக்கத்தைப் பொருளாதார - 2

விளக்கக் காற்றுதல்

1. பார்வாக்க புரேப்பு (ஆ) தமிழ்ச்சொல்லையால் - அமுக்கப் பார்வாக்க விளக்கம்

பந்தை - 4

2. விளக்கக் புரேப்பு - திகதை குறையும் வகையாக

3. விளக்கக் குறையும்

- அமுக்கப் பார்வாக்க விளக்கம் முதல் - 4

4. சாத்தியக் குறையும்

- திகதை குறையும் வகையாக

5. இல் பந்தையால்

- திகதை குறையும்

6. விளக்கக் குறையும்

- குறையும் பருவமாக

7. சாத்தியக் குறையும்

- திகதை குறையும்

8. விளக்கக் புரேப்பு

- அமுக்கப் பார்வாக்க விளக்கம்

9. விளக்கக் புரேப்பு

- திகதை குறையும் வகையாக

10. விளக்கக் புரேப்பு

- அமுக்கப் பார்வாக்க விளக்கம்

11. விளக்கக் புரேப்பு

- அமுக்கப் பார்வாக்க விளக்கம் முதல் - 4
TOXIC ASPECTS:

Lingam is one of the poisonous compounds of mercury (i.e) mercuric sulphide (cinnbar). Artificial preparation occurs as red crystalline powder and is known as vermilion.

Signs and symptoms of lingam toxicity

Salivation, inflammation of gums and occasionally a blue line at their junction with teeth, sore mouth and throat, loosening of the teeth, gastrointestinal disturbances, anaemia, anorexia and loss of weight.

Chronic poisoning

This may result from

1. Continuous accidental absorption by workers
2. Excessive therapeutic use
3. Recovery from a large dose.
(B) GUNAPADAM ASPECTS

(குணபடம் ஆய்வுகள்)

"காரண காரண காரண மற்றவைகள்

பிறகுபோக்கும் பிறகு போக்கும் போக்கும்

மாரிபவுக்காக பண்டைத் தொழில்

காரண உரியதைக் காரண கருத்துக்"
கீழ் காணப்பட்டது:

அதிக அளவில் கட்டியைகளின் முறையை மாற்றுவது, மேலும் உடல் திண்ம நோய்களை நிறைவேற்று, பின்னர் வாழ்க வருவது, மற்றும் நிலையை குறிப்பிட்டு இரண்டாம் தரவு காண்கையில் இல்லாத குறிப்பிட்டு.

அம்மகாட்சிய் வேறுபாடு:

நிறுவணும் மூலமான பெருக்கம் மற்றும் காண்பாய்கள் விளக்க வேண்டும் கிளைகளில் இல்லாத குறிப்பிட்டு.

முன்னேற்றம் பாதுகாக்கும்:

"அதிக அளவில் கட்டியைகளின் முறையை மாற்றுவது."

- பம்பா என்னும் பெயரால்.

அம்மகாட்சிகளும் பல்வேறுபல்வேறு:

1. அம்மகாட்சியான கூதெனர் கிளை திண்ம நோய்களில் குறிப்பிட்டு நிறைவேற்றுவதன் சீரைச்.
2. நிறுவணும் மூலமான மற்றும் காண்பாய்கள்
3. காண்பாய்கள் பெருக்கம் விளக்க வேண்டும் கிளை குறிப்பிட்டு பல்வேறு
4. அம்மகாட்சியான பாதுகாக்கும் குறிப்பிட்டு விளக்கம் பாதுகாக்கும் கிளை குறிப்பிட்டு பல்வேறு.

காணம் - டி.டி.பா. குரு துணைப்பு
முன்னேறும் - பம்பா நிறுவணாமை
பல்வேறு - கூதெனர் கிளை

குறிப்பிட்டு பல்வேறு
தொடர் கிளை
புதியதற்காரி
சீரைச்
2-மாநிலம்
அழுக்கார்கள்
நூற்றண்டு
பாடல்குறிப்பி:

"நவான் போன உரோளை செலுத்த பெரணு பாடல்
புனி நிராசகம் காத்துப்போக பல்லவராய நடனம் நடனம் - நீர்த்தாவல்
நடன கலாண்ட ரம் நங்கால் பானான்கள் காற்றில்
நில்லா கலையில் காண்மிகள் வெடுமை“

"நவான் குறுக்கலா விளக்க காட்டியது செலுத்தம்
சந்தா பசை வரையும் குறுக்கலா காட்டியது
தொழில் உறுப்பினர்கள் அவர்களை செலுத்தம் பானான்கள்
நவான் செற்றவன் பானான்கள் பல்லவராய செலுத்தம்“

"நவான் குறுக்கலா விளக்க போட்டியோ விளக்கல்
நான் இறங்கிரும் கான்கிறேன் வாங்கல் பானான்கள்
நவான் செற்றவன் பானான்கள் பல்லவராய செலுத்தம்“

"நவான் குறுக்கலா விளக்க போட்டியோ விளக்கல்
குறுக்க இறங்கிரும் கான்கிறேன் வாங்கல் பானான்கள்
நவான் செற்றவன் பானான்கள் பல்லவராய செலுத்தம்“

"நவான் துறவலுக்காக செலுத்த போட்டியோ விளக்கல்
நான் இறங்கிரும் கான்கிறேன் வாங்கல் பானான்கள்
நவான் செற்றவன் பானான்கள் பல்லவராய செலுத்தம்“

நவான் குறுக்கலா விளக்க போட்டியோ விளக்கல்
யானை எறை என்பதுபடியோ மாதிரம்.

- கூறுக்கலா குடும்ப மாதிரிப்பு 326, 327
ஒன்றுகள் தமிழ் பதிகம் பதிவு:

1. பொருள் பாதுகாப்பு பொருள் - 1 பம்: கருவயலிட - 2 பம் விளக்கம் கச்சேரி அன்புகள்

2. பொருள் - 100பம், பொருள்பொருள் - 6 ¼ பம் விளக்கம் 1 பம் கருவி மோப்பினின் கணம் மாற்றம் குழுத்து. விற்சோ ஆல்சுப்புகள்

3. காண்டு செப்பு மூலம் - 1பம்

4. ஆங்கிலிகம் மூலம் - 1பம்

ஆங்கிலிகம் மூலம் - ½ பம் விளக்கம் கணம் பொருள் இருப்பு 4 பொருள் வகைகளும் மாநிலாக்கான பாதுகாப்பு பொருளின் ஆளும் 1பம் மோப்பினின் மாற்றம் மோப்பினர்கள் குழுத்து.

2. கருவகள் பொருள்:

64 கருவகளும் காலமும், தரும் 120தீக்வம் குழுத்து.

காலம்கால் காலமும்.

காலம்கால், பொருள்பொருள், உட்புற விளக்கப்பாடு அடிப்படை.

பதிகத்துறைகள்:

1. பொருள்களுக்கு ஒவ்வொன்றும் பொருளை வகைப்படுத்தும் செருக்கையுடைய செருக்கை செருக்கை செருக்கை செருக்கை அந்தந்தக் குழு ஆட்சிக்கு வரவில்லை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செருக்கை செரு கருவகள் பொருளை மேலும் குழுத்து.
5. புரிந்துவிளிந்தவை, அதிகரிக்கவும் அனுப்பும் எனும் கட்டமைப்பை

“கட்டமைப்பால் புரிந்துவிளிந்தவை கட்டிய வரும் என்றோடு
புரிந்துவிளிந்தவை கண்டு கருதவது காரணமாக காணல்
வாழ்க்கையை நிறுத்திகள் எடுப்பது மேல்படுத்துவதற்கு திகழ்படுவதற்கு
புரிந்துவிளிந்த கட்டமைப்பை வருமாறு வகைக்கிறீர்”

- குறிப்பிட்டு புரிந்துவிளிந்த கிளிக்கப்பட்ட

நுழைவு தின்ம பொருள் முறைமை

கிளிக்கப்பட்டு அமைக்கம்

திருநூற்பி, திருவரி, குருவி, பூநூற்பி காரணமாக காணல், காண்டு, பொருளியல்,
பொருளியல், அதிகரிக்கவும் அனுப்பும் விளக்கம் மறைக்கும் 10 - கிளிக்க, மேலும் 80 கிளிக்க
இழைக்கப்பட்ட இயங்குப் பணியாளர் காரணமாக நிறுத்துவதற்கு, பொருளியல் அமைக்கம்
மறைக்கும் விளக்கம் காட்டிகளில் 7 வருடங்கள் பிறந்தவர் அணுக்கிற் விளக்கம்

கிளிக்க விளக்கம்: 80 மணிக் காலம், 20 மணிக் காலம், 5 மணிக் காலம், 40 மணிக்
பிரிக்கம், பிரிக்கம் தினக்கப்பட்ட.

- கிளிக்க கண்டுக்கிழியார் - பகுதி 166

அறைந்து விளக்கம் பின்னர் நேர்யானத்தை

1. முக்கால் கிளிக்கப்பட்ட

- கிளிக்கக் கண்டுக்கிழியார் பகுதி - 73
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   - எதிர் காத்திருக்கும் பிள்ளை பக்கம் - 21
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6. குரங்காளின் ஓலமயர் பக்கம்
   - ஓலமயர் குரங்காளின் எதிர் பிள்ளை பக்கம் பக்கம் - 57
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   - அழைப்பாக காத்திருக்கும் பக்கம் - 3
C) GUNAPADAM ASPECTS

துரு

சுருக்கம்:

- துரு துரும்
- படுத்து துரு (படுக்கு துரு)
- படுத்து துரு
- இனு
- மாதம்

முன்னிலைமுறை:

- முன்னிலைலை அதுமான புதுமையை குறிக்கிறது, இதில் மேற்குத் துரு, இது புதுமை நிற்கும் பணிகம் பிரிக்கிறப் புதுமையுடன்.
- தனைத் துரு
- பட்டியலின்
- இனு துரு
- காலமை

பயன்படுத்தும் எடுப்பு: சுழமை குறிப்பிட்டு

கேட்டம் : பெண்கம்
கரைகோயில் : கோயில்
பிரித்து : காலம்
<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>diaphoretic</td>
<td>Diaphoretic</td>
</tr>
<tr>
<td>diuretic</td>
<td>Diuretic</td>
</tr>
<tr>
<td>anti periodic</td>
<td>Anti periodic</td>
</tr>
<tr>
<td>anodyne</td>
<td>Anodyne</td>
</tr>
<tr>
<td>antiphlogistic</td>
<td>Antiphlogistic</td>
</tr>
<tr>
<td>antipyretic</td>
<td>Antipyretic</td>
</tr>
<tr>
<td>narcotic</td>
<td>Narcotic</td>
</tr>
<tr>
<td>sedative</td>
<td>Sedative</td>
</tr>
</tbody>
</table>

- எடுக்கவும் தீர்மானம், குணற்காலத்தில் பாதிப்பு
- அடைக்கும் புது பாதுகாப்பு - குச்சிப்பிட்டியம்
- கால்சுடன் குச்சிப்பிட்டியக் கருக்கம் தமிழில் குச்சிப்பிட்டியன்
- குச்சிப்பிட்டியக் குச்சிப்பிட்டியன்

- அடைக்கு வரும் இடையெல்லாம் பாதிப்பு
- மேலும் புது பாதுகாப்பு, குச்சிப்பிட்டியாக கொன்று, குச்சிப்பிட்டியக் கருக்கம்

- குச்சிப்பிட்டியக் குச்சிப்பிட்டியம்.
வருடக் காண்கறை:

ஆக்சரியாம் கிருட்டாலிக்காக குறுக்கி செஞ்சுத்தின் 3 முறை ஆராய்ச்சியானால் செஞ்சுத்தின்
மாற்று செய்யப்பட்டுள்ள அலகுகளை விளக்கம் செய்யும்:

- குழுப்பாக கடுமை வலிமை

உலக எதிர்விளையாட்டின் புது வருடம் ஆடம்பர் பிள்ளி இவ்வீர்க்கு குறுக்கிடும் கூடியாக
அல்லது பிள்ளி குறுக்கிடும் புது வருடம் ஆட முடிக்கு அலகுகளை கழிவிப்பதான்.

- முரண்டக பகுதிகளின் சித்தியப் பககம்: 16
TOXICOLOGICAL ASPECT

Aconitum ferrox is used in the preparation of medicines. If it is consumed in excess (or) without proper purification toxic features manifest.

**Toxic features**

- Tongue, mouth and face become excised due to the pungent taste and loose their sensation.
- Body pain
- Abdominal colic
- Anorexia
- Hiccough
- Deep syncope
- Disturbed sleep
- Generalized pruritis
- Body becomes smoky in colour
- Vomiting
- Feeble pulse not able to feel
- Hallucination
- Heaviness of the hypogastric region
- Blood stained diarrhea with tenesmus
Antidote used for aconite poisoning

- Chichorium intybus root (kasini ver) is triturated with cow’s milk or ghee and is given according to the intensity of the toxic effect.
- The epicarp of Terminalia chebula is made into a decoction properly and it is given orally.
- The seeds of Putranjiva roxburghii (putra sogi) triturated with cow’s ghee can be used as an antidote.
- Borax triturated with cow’s ghee can be used.
- Piper nigrum triturated with cow’s ghee or its decoction can be used.
- A decoction is prepared with 10gm each of Amaranthus campestris (siru keerai) and Feronia elephantum and 20gm of Carum copitcom. To this 10gm of salt is added and administered. This must be consumed for one week to three weeks depending on the severity of the toxic features.

Siddha Toxicology – Dr. K.S. Murugesan Mudaliar
மினி பார்வை:

பிள்ளை, குளத்துகள், குழுக்கள் வெளி, பொழுதுபொழுது, கருவுகள், பெரும்பலகை மேல் குழா கால்பாட்டுகள் விளக்குகளிடையே கரசை, பெரும் நோக்குகளை பார்வை.

அத்துடன் - குறிப்பிட்டுப்படும்

பார்வை பார்வையாக இருக்கும் குற்றுமுறை குறிப்பிட்டு அனைத்தும் குற்றுமுறை

- குறுநிலையில் குழுக்கள் மேலே

பார்வை பார்வையாக இருக்கும் குற்றுமுறை குறிப்பிட்டு அனைத்தும் குற்றுமுறை

பார்வை பார்வையாக இருக்கும் குற்றுமுறை அனைத்தும் (ஆ) பார்வை பார்வையாக இருக்கும் குற்றுமுறை என்பது பார்வையாக நகர்ந்த விளக்குமுறை.

- குறுநிலையில் குழுக்கள் மேலே

(மேலும் ஆய்வு நிலைக் குறிப்பிட்டு) பார்வை 256

பார்வையாக மேலே அனைத்தும் பார்வையாக நிளைநிலை குற்றுமுறை என்பது பார்வை என்பது என்பது.

என்றும் இந்த பார்வை என்பது என்பது என்பது என்பது

குறுநிலை என்பது என்பது

• குறியீடு குறிப்பிட்டு - மேலும் நிலையாக குறிப்பிட்டு

சிலையான அளிப்பு

திசை, இசை, கதாபாரி, பொழுதுபொழுதும் குற்றுமுறை, கண்டு, விளக்குமுறை, பார்வையாக, குறுநிலையாக, உச்சிக் கதாபாரியை, 1 பார்வை, 8 பார்வை நோக்குகளை பார்வையாக என்பது என்பது என்பது என்பது

55
நூற்றோர் காலநிதிகளுக்கும் 7 மாதங்கள், தகவலைச் செய்தத்தின் பின்னர் பிரிந்துகொண்டு அதன்.

முடிவு பாதுகாப்பு சில்பக் 80 மத்திணைகள், 40 மத்திணை பிற்காலம், 20 மத்திணை காலம், காலம், காலம், காலம், மாணவர், காலம், பிரதானமாக பெறப்பட்டுள்ளதா.
D) GUNAPADAM ASPECTS

கிரிபிளி

கோல விளக்கங்கள்:

நுட்சகி, ராணாபா, ராணாமாரா, ராவரா, ராதாரி, ராவலம், ராவறி, ராவலம்பாங்கி, ராமா, ராமா, ராவரா, ராவா, ராவலாம், ராவளாம், ராவளாம், ராவணி, ராவனம், கதி, தண்டனை, பிப்பிளி, சொந்தர், அம்ப, அரிமார்.

மாநிலம்:

என்று என்று என்று. மிகவும் சிற்றுக்குனிக்கப்பட்டு மூன்றாக்கிகள் குறிப்பிட்சுகளில் குறிப்பிட்சு முக்கியத்தக்க மூன்றிலும் குறிப்பிட்சு முக்கியத்தக்க குறிப்பிட்சு முக்கியத்தக்க. இதுவான் அந்த கிரிபிளி மூன்றாக்கிகள் மூன்றாக்கிகள் கிரிபிளி.

மாநிலம் உட்புண்஢ம்:

கனம், அதி

கோலம்:

போர்சு - கிரிபிளி
கோலம் - கோலம்
பிளைவு - கிரிபிளி

2-வாவுக்கு

கனம் - கனம்
கோலம் - கோலம்
பிளைவு - கிரிபிளி
நற்பால்:

- Stimulant

- Carminative

- జంతుభూమిని కలిగిపోయినది నిద్రపరము

- ఇతర విద్యారాధన పదార్థాలు ప్రత్యేకమైనాం - ప్రతిక్రియ విస్తృతం

- పాటం విస్తృతం ప్రవేశం - ప్రతిక్రియ విస్తృతం

- పాత్రెందు చిహ్నమైన ప్రత్యేకమైనది ప్రతిక్రియ విస్తృతం

- విద్యుదాల పరము ప్రత్యేకం అందం

- (దిగురాం విస్తృతం)

- (దిగురాం విస్తృతం)

- (దిగురాం విస్తృతం)

- (దిగురాం విస్తృతం)

- (దిగురాం విస్తృతం)

- జంతుభూమి, జంతుభూమి, జంతుభూమి ప్రత్యేకమైన ప్రత్యేకమైన ప్రతిక్రియాకు విస్తృతం

- తైనపంచం పరము ప్రతిక్రియ విస్తృతం.
1. சுரசத்து, கரணி, தன்னை, பின்னை, லலைக்காளி, பெல்லை, பொருளிய விளை, பருப்பியா, சது பீசியிருக்கு, வெளிப்பாடு சிந்துமுள்ள மாறுகட்ட ஷ்
போல்போலும் திப்பும் பாதிக்கிறது. 8 பாலுக்கு பிரித்து ராணியானவர் உயிர்
காப்புக்கு மறுபதியான ராணியுடன், காசிக்கு தாசிக்காய் பனிரிழ்ச்
நிலையம்.

- கலந்துருக்கி கால்பாயம் பக்கம் - 278

2. விலங்காக அமுக்கும்

- கிளா கால்பாயம் கிளா பக்கம் - 161

3. செழுந்து விளக்கு விளையாடும்

- செழுந்துகளுக்கு கிளா பாகுவழ் ஆழ்மாரம் பக்கம்

பக்கம் - 159

4. விளையாட்டுகள் கைமாட்டப்பட்டு மாற்றுகின்றன

- விளையாட்டு மாற்றுக்கின்றப் பக்கம்

5. பெரு மாற்றுகின்ற

- பெருளையுள்ள காட்சிகள் கால்பாயம் பிளப்பம் முறியின

பக்கம் -12
A) CHEMICAL ASPECTS OF LINGAM

Chemical Name:

Natural - Cinnabar
Synthetic - Vermilion

Scientific Name:

Mercuric sulphide (or) Mercuric II Sulphide, colour – cochineal red to brownish red lead grey symbol – Hgs

Molecular formula:

Molecular weight - 232.68
Hardness - 2.5
Specific gravity - 8
Sublimes at 446°C
Crystal systems - hexagonal (or) Rhombohedral

Characters:

Cinnabar is practically insoluble in water not allowed by HNO₃ or cold HCL, but decomposed by con.H₂SO₄ soluble in aquaregia with separation of sulphur and in warm Hcl with evaluation of Hydrogen sulphate.
Preparation of cinnabar at laboratory:

One part of the Mercury and four parts of the sulphur and to be placed in an ironpot and heated for sometimes. The amalgam is then to be broken into pieces and put into a glass bottle, previously coated all round with mud and rag one inch deep and dried in shade. The bottle is to be heated for five days continuously by means of the five increasing gradually intensity at a uniform rate. The heating is then to be discontinued and the center of the glass bottle taken out on the seventh day. The product will be found to be cinnabar.

History and Occurrence:

Cinnabar commonly known as lingam, Hingul, shingara is fine red colour powder. Alchemy is an art of refurination using mercurials Indian alchemy probably being about 500 A.D.

Indian Alchemy mercury and cinnabar was known and used in Europe, china 100yrs before the first mention in Indian Medicinal works. Chinese could properly select cinnabar as the best substitute of blood in colour. This made cinnabar soul and its components sulphur and mercury sub souls. Nothing better than cinnabar was found as equal to red colour cinnabar is a heavy native one mercury, extracted all over the world found in all countries, except Antartica
Occurrence:

It is a mineral and important chief of mercury. It occurs in mineable deposits in a very few localities. Commonly found in veins and impregnations deposited near the surface of recent volcanic rocks and hot springs and most important deposits are Almaden and Spain and it has been mined for more than 2500 years from these places.

Other localities are Idria, Italy, Kweichow, China and New Almaden, New Idria, California of U.S.A. It is also mined in Nevada, Utah, Oregon, Arkansas, and Texas.

Properties:

Cinnabar exist in 2 modifications, black and red. Both occur in native.

Artificially prepared cinnabar. However a vivid scarlet substance and is used as an artist pigment called ‘Vermilion’.

The scarlet red variety occurs as lumps and in Hexagonal alpha form crystals.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Vermilion red</td>
</tr>
<tr>
<td>Hardness</td>
<td>2.5</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>8.10</td>
</tr>
</tbody>
</table>

The shortest distance Hg- s is 2.52A and the binding between mercury and sulphur probably ionic in character.
Black mercury sulphide (meta cinnabar) (black cubic B- form)

- Colour: greyish black
- Hardness: 3
- Specific gravity: 7.6

The zinc blends structure with 5.82 A. The shortest Hg-s distance is the same as in cinnabar. Black one is found nature in small amount.

The meta cinnabar is the natural source of mercury II sulphide black variety. But it can also be synthesized artificially by following methods.

Passing hydrogen sulphide (H$_2$S) gas into mercurial salt solution.

\[ \text{Hg}^{++} + \text{H}_2\text{S} \rightarrow \text{HgS} + 2\text{H}^+ \]

Conversion of Mercury II Sulphide (black) to mercury sulphide (red)
1. In black variety is heated upto 500$^0$C it changes to red
2. When the black powder of mercury II sulphide is sublimated to 446$^0$C

It yields red form of HgS

In ancient period it was prepared by vaidya using Hg and S in 5:1 ratio

Cinnabar on heating either in a current of air or with the addition of iron or quick lime, giving or yielding mercury
1. When treated with a current of air
   \[ \text{HgS} + \text{O}_2 \rightarrow \text{Hg} + \text{O}_2 \]

2. When treated with Iron
   \[ \text{HgS} + 2\text{Fe} \rightarrow \text{Hg} + \text{Fe}_2\text{S} \]

3. With quick lime
   \[ \text{HgS} + \text{CaO} \rightarrow \text{Hg} + \text{CaS} + \text{CaSO}_4 \]

**According to report of Dr. Chattergy**

- Cinnabar contains 86.22% mercury and 13.78% of sulphur.
- It is black in acid medium.
- Change of red coloured cinnabar powder to black in presence of three myrobalans of fruit juice is due it change in PH Value.
- Neutral form of mercuric sulphide is obtained by reacting sublimated mercury and sulphur in Kupipak Vs apparatus.
B) CHEMICAL ASPECT OF BORAX

Chemical Name: Sodium tetra Borate

Vernacular Name:

Sans : Tankana, Tunkana, Rasashodan.

English : Sodiun Borate, Sodium biborate, Biborate of soda, Borax tynkal pyroborate or tetraborate sodium.

Hindi : Tinkal, Tincal, Sohaga Bed, Duk, panj – Sohaga, Suhaga, Tinkar, Tinkal

Kach : Vavut

Arab : Buraekes - Saghah

Pers : Tinkar - tankar

Tibetan : chusal

Bon & Guj : Tankam –khar, Kuddia –khar

Tamil : venkaram, vengaram

Tel : Velligaram, Elegaram

Mal : Ponkaram

Can : Biligara

Sinh : Pushara

Brum : lakhiya

Malay : Pijar, palleri

- The wealth of India vol IIB page 199
Chemistry of Borax:

Molecular Formula: $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$

- $\text{Na}_2\text{O}$ : 16.2%
- $\text{B}_2\text{O}_3$ : 36.6%
- $\text{H}_2\text{O}$ : 47.2%
- Odour : Balsamic odour
- Taste : Like Papada Khar
- Specific Gravity : 1.74
- Colour : Greyish white
- Form : transparent prismatic crystals

It occurs in the form of large transparent prismatic crystals, resembles in shape the crystals of augite. Borax is obtained by boiling native calcium borate with solution of sodium carbonate.

$$\text{Ca}_2\text{B}_6\text{O}_{11} + 2\text{Na}_2\text{CO}_3 \rightarrow \text{Na}_2\text{B}_4\text{O}_2 + 2\text{NaBO}_2 + 2\text{CaCO}_3$$

Calcium Sodium Borax
Borate Carbonate

Action of Heat:

On heating above its melting point. Borax loses its water of crystallisation and swells up to a white porous mass, on further heating it melts to a liquid which then solidifies to a transparent glassy mass which consists of sodium meta borate ($\text{NaBO}_2$) and Boric anhydride ($\text{B}_2\text{O}_3$).
Na₂B₄O₇·10H₂O \xrightarrow{\text{Heat}} \text{Na₂B₄O₇-10H₂O} \\
\text{B₂O₃ + 2NaBO₂}

Boric Anhydride   Sodi Metaborate

Glass Mass

**Characters:**

It is composed of boric acid and soda. In the native state, it exists as an impure saline incrustation of a dirty white colour. It exists as crystalline tough masses or in the form of translucent irregular masses. Exposed to the air it becomes opaque. Another variety known as “Telio Tankana” is an impure salt met with in small pieces or smooth translucent six sided prisms.

**Sources:**

It occurs as a natural deposit. Crude borax is found in masses by evaporation of water, on shores of dried up lakes in India and Tibet it is also obtained from the mud of lakes surrounded by hills in Nepal.

In this crude state it is known as “Sohugoor” or “Tinkala,” when purified by dissolving it in water straining through cloth, evaporating to dryness and crystallizing, it is called “Borax” or “Tankankhar”
Mining and Preparation:

The bedded borate deposits are extracted by underground mining methods, and the mined materials are crushed and roasted to remove the water. Various constituents are separated by evaporation followed by crystallisation. During evaporation sodium carbonate, sulphide and chloride are precipitated, borax and other salts which are then refined, to pure borax.

Purification:

Borax is dried and heated until its moisture content is lost. Then it is made into fine powder.

Action:

Diuretic Astringent, Antacid, Antiseptic, Emmengogue, and local sedative.

Medicinal uses of borax:

It is used in cases of loss of appetite diarrhoea, painful dyspepsia, cough, Asthma, and skin diseases. It is employed in preventing abortion and promoting uterine contractions.

Internal uses:

In the Kapha type of fever a pill called “Kapha –ketu rasa” made off aconite, Borax and reduced conch –shell in equal parts, powdered, mixed
well and soaked over three times in the juice of fresh – ginger, and made into pills of two grains each is given with honey and ginger – juice.

**Uses:**

1. Glycerine of borax in 10 – 20 drop doses is very beneficial in the treatment of summer diarrhea of infants. It checks the griping pains deodorises the offensive motions.

2. A mixture of Borax, long pepper, baberang seeds equal parts given for five days at the menstrual period for the purpose of preventing conception.

3. In cases of irregular menstrual discharge and in chronic uterine affections, doses of 10 grains with 10 grains of cinnamom has been proved to useful.

4. 30 grains of borax with 10 grains of powdered cinnamom, little warm congee, can be given in convulsions attendant on labour.

5. In doses of 1-5 grains given in mother’s milk for convulsions of infants.

**External uses of Borax:**

1. Externally borax is used in lotion (lin 40 of water) in Acne, Chloasma etc, to allay itch in uriticiania psoriasis, pruritus pudendi vulvi, scroti, and ani in gangrenous buboes and sloughing ulcers.

2. Boro – glycerine is useful as an antiseptic lotion in purulent opthalmia an diphtheria.
3. Solution of Borax – very useful as injection in cystitis, leucorrhoea and gonorrhoea.

4. Solution of borax in distilled vinegar is an effectual application for ringworm.

**Commercial uses of Borax:**

1. Borax is extensively used in glass, vitreous enamel and ceramic glass field.

2. Boric oxide is an essential component of heat resist borosilicate glass, glass fibres, industrial, optical and other glasses.

3. Borax is widely used in cosmetics, detergent soap, pesticides, and metallurgical operations.

4. Boron compounds are used in nuclear shielding application and atomic submarines.

**DR.K.M.NADKARINI’S**

*Indian Materia medica Vol – II*
C) BOTANICAL ASPECTS OF ACONITUM FEROX

Botanical Name:

Aconitum ferox wall. exser

Classification:

Class : Dicotyledonae
Sub class : Polypetalae
Series : Thalami florae
Order : Ranalse
Family : Ranunculaceae

Vernacular Names:

Tam : Vashanabi
Tel : Ativasanabhi
Mal : Vatsanabhi
Kan : Vasanabhi, Vatsnabhi
Mar : Bachnag
Guj : Vacchanag
Hindi : Bacchanag, Mahoor, Mitha Zahar.

Habitat:

Chiefly found in temperate and other colder parts of the world. In India chiefly found in hilly regions in western Himalayas
**Habit:**

Plants are annual (or) perennate herbs. They perennate by means of tuberous roots. The primary root perishes and is replaced by adventitious roots. These roots becomes tuberous and contain reserve food material in them.

**Leaves:**

Alternate or opposite generally much divided sometimes entire with dilated and sheathing petioles.

**Flowers:**

Ebracteate, irregular Zygomorphic

**Calyx :**

3 – many sepals, Free sepals are petaloid

**Corolla :**

5 Petals, free

**Androecium:**

Numerous stamens and free, Hypogynous arranged spirally.

Gynoecium: 3-5 carpels, free

**Fruit :**

Etaerio of follicles.
Alkaloids:

The total alkaloid content in commercial Aconitum ferox varies from 0.63 to 4.7 percent pure roots of Aconitum ferox contain the alkaloids pseudaconitine, chasmaconitine, indaconitine, and bikhaconitine recently two new alkaloids vera trayl pseudaconitine and diacetyl pseudaconitine.

Uses:

The plant after mitigation is used externally in the form of paste or liniment in cases of neuralgia, muscular rheumatism and inflammatory joint affections. Internally, it is administered for nasal catarrh, tonsillitis, sore throat, gastric disorders, debility and fevers of inflammatory origin. It is also useful as a sedative and diaphoretic.

- Taxonomy of angiosperms, B.P. Pandey
- Indian materia medica Vol - I & II, A.K. Nadkarni
- Survey of Medicinal plants unit – Siddha – CCRAS
- Flora of India, Hooker
- T.V. Medicine, Chemistry, Botany and allied science
BOTANICAL ASPECTS OF PIPER LONGUM

Botanical Name:

Piper longum – Linn

Classification (Bentham and Hooker)

Class : Dicotyledonae
Sub Class : Monochlamydeae
Series : Microembryeae
Family : Piperaceae

Vernacular Names

Tamil : Thippili, Pipili, sirumulam, Randan tippili (root)
Eng : Long pepper
Tel : Pippilu
Mal : Thippili
Kan : Hippili, tippali
Sans : Pippali
Duk : Pipliyan
Pers : Daraife – fil
Hindi : Pipal – pipli piplamul (root)
Beng : Piplamor (root)
Habitat:

Mostly tropical

Habit:

Climbing shrubs (or) herbs

Stem:

Succulent and herbaceous provided with jointed and swollen nodes. The resin and oil secreting sacs are found in both epidermis and cortex.

Leaves:

Simple, alternate, opposite, petiolate, entire stipulate or exstipulate palmately or penninerved often fleshy pungent taste.

Inflorescence:

Dense spikes(or) umbellate spikes.

Flowers:

Naked, more or less sunk in the flesh axis of the inflorescence. They are closely arranged minute bracteate unisexual rarely bisexual, hypogynous.

Perianth:

Absent.

Androecium:

1-10 stamens, anthers 2 celled or apparently 1 celled, longitudinal dehiscence, filament short.
**Gynoecium:**

Ovary 2-5 carpels 1 celled ovary superior, ovule solitary or basal placenta, style absent, stigma 2-5.

**Testa:**

Thin, seed coat, Albumen floury.

**Fruit:**

The fruit is small drupe but described very erroneously as a berry.

**Alkaloids:**

Piper longum has shown the presence of the alkaloids piperine (4 - 5%) and piplartine and two new liquid alkaloids.

**Uses:**

It is used for diseases of respiratory tract Viz - cough, bronchitis, asthma, etc as counter irritant and analgesic. When applied locally for muscular pain and inflammation as snuff in coma and drowsiness and internally as carminative as sedative in insomnia and epilepsy as general tonic and haematinic as cholagogue in obstruction of bile duct and gall bladder.

- Taxonomy of angiosperms, B.P. Pandey
- The wealth of India – Vol II & XII
- Flora of the Presidency of Madras – Vol – II, J.S.Gamble
- A handbook of Alkaloids and Alkaloid containing plants
MATERIALS AND METHODS

Purification of Lingam:

A mixture of equal quantities of lime juice, cow’s milk and kuppaimeeni juice was taken. Lingam was taken in an earthen plate and heated in mild flame. To it the above mixture was added little by little till it was absorbed completely. By this procedure, lingam was purified.

Linga kattu:

Equal quantities of Karpooram and Palingu sambirani are taken. They are rubbed to form a waxy paste in a kalvam. It is taken out when still warm and divided into 10 equal parts. One part is spread on a plain white cloth along with the purified lingam. Burn the bundle in oil lamp flame. The ashes on lingam are removed after cooling. The same procedure is repeated with the remaining 9 parts of karpooram, Sambirani paste.

Purification of Venkaram:

Venkaram is powdered and roasted

Purification of Karunabi:

Karunabi was cut into small pieces and soaked in cow’s urine for 3 days. The cow’s urine was drained and karunabi was left in the sun to dry.
Purification of Thippili:

Thippili was soaked in kodivelli leaf juice for 1 nazhigai (24min). Then the juice was drained and thippili was left in the sun to dry.

Preparation of Vedantha Bairava mathirai

- Linga kattu - 140gm
- Purified Venkaram - 280gm
- Purified karunabi - 420gm
- Purified Thippili - 420gm

The above drugs were mixed together and rubbed with Ginger juice for 12 hours. Afterwards, it was rolled into Kundrimani size pellets and dried in shade.

Dose - 130mg

Anupaanam - Honey

Route of administration - oral
Preparation of the extract:

5 gram of the drug was weighed accurately and placed in a 250 ml clean beaker. Then 50 ml distilled water was added and dissolved well. Then it is boiled well for about 10 minutes. It was cooled and filtered in a 100 ml volumetric flask and then it was made up to 100ml with distilled water. This fluid was taken for analysis.

QUALITATIVE ANALYSIS

<table>
<thead>
<tr>
<th>S.NO</th>
<th>EXPERIMENT</th>
<th>OBSERVATION</th>
<th>INFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>TEST FOR CALCIUM</td>
<td>No white precipitate was formed</td>
<td>Absence of calcium</td>
</tr>
<tr>
<td></td>
<td>2ml of the above prepared extract was taken in a clean test tube. 2 ml of 4% Ammonium oxalate solution is added to it.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>TEST FOR SULPHATE:</td>
<td>A white precipitate was formed</td>
<td>Indicated the presence of sulphate</td>
</tr>
<tr>
<td></td>
<td>2ml of the extract was added to 5% barium chloride solution.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. **TEST FOR CHLORIDE**  
The extract was treated with silver nitrate solution.  
No white precipitate was formed  
Absence of chloride

4. **TEST FOR CARBONATE**  
The substance was treated with concentrated HCL.  
No brisk effervescence was formed  
Absence of carbonate

5. **TEST FOR ZINC**  
The extract was added with Potassium Ferro cyanide  
No white precipitate was formed  
Absence of Zinc

6. **TEST FOR IRON-FERRIC**  
The extract was treated with concentrated Glacial acetic acid and potassium ferro cyanide.  
No Blue colour was formed  
Absence of ferric iron

7. **TEST OF IRON FERROUS:**  
The extract was treated with concentrated nitric acid and ammonium thio cyanate.  
Blood red colour was formed  
Indicates the presence of ferrous iron
<table>
<thead>
<tr>
<th></th>
<th>Test</th>
<th>Procedure</th>
<th>Result</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>TEST FOR PHOSPHATE</td>
<td>The extract was treated with ammonium molybdate and concentrated nitric acid.</td>
<td>No Yellow precipitate was formed</td>
<td>Absence of Phosphate</td>
</tr>
<tr>
<td>9.</td>
<td>TEST FOR ALBUMIN</td>
<td>The extract was treated with Esbach’s reagent.</td>
<td>No Yellow precipitate was formed</td>
<td>Absence of Albumin</td>
</tr>
<tr>
<td>10.</td>
<td>TEST FOR TANNIC ACID</td>
<td>The extract was treated with ferric chloride.</td>
<td>No blue black precipitate was formed</td>
<td>Absence of Tannic acid.</td>
</tr>
<tr>
<td>11.</td>
<td>TEST FOR UNSATURATION</td>
<td>Potassium permanganate solution was added to the extract.</td>
<td>It gets decolourised.</td>
<td>Indicated the presence of unsaturated compound</td>
</tr>
<tr>
<td>12.</td>
<td>TEST FOR THE REDUCING SUGAR</td>
<td>5ml of Benedict’s qualitative solution was taken in a test tube and allowed to boiled for 2 mts and added 8-10 drops of the extract and again boiled it for 2 mts.</td>
<td>No colour change occurs</td>
<td>Absence of Reducing sugar</td>
</tr>
<tr>
<td></td>
<td><strong>TEST FOR AMINO ACID:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td>One or two drops of the extract was placed on a filter paper and dried it well. After drying, 1% Ninhydrin was sprayed over the same and dried well.</td>
<td>Violet colour was formed</td>
<td>Indicated the presence of Amino acid</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TEST FOR MERCURY:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The extract was treated with ammonia and boiled (till the ammonia caeses off) and then potassium iodide was added</td>
<td>A scarlet precipitate was formed</td>
<td>Indicated the presence of mercury</td>
<td></td>
</tr>
</tbody>
</table>
PHARMACOLOGICAL STUDIES

Analgesic study of vedantha bairava mathirai by Tail flick method

Introduction:

According to siddha medicine the vedantha bairava mathirai is indicated in vatha diseases. From this indication the drug vedantha bairava mathirai might possess analgesic activity.

Aim:

To study the analgesic effect of vedantha bairava mathirai on albino rats by tail flick method.

MATERIAL AND METHODS:

Preparation of the Test Drug:-

1 gm of vedantha bairava mathirai was suspended in 10ml of hot water as suspending agent. This 1ml contained 100mg of the test drug.

Equipment:

Hot water bath

Procedure:

Six male albino rats (weighing 80-100gms) were used in three groups. The animals were allowed free to access food and water until they
were brought for the experiment. The animals which showed the positive response to the stimulus within a given time were selected for the study.

After the selection of animals which were responding to stimulus within 2 seconds, they were divided into 3 groups, each consisting of 2 rats.

The hot water was maintained at 55°C. The tip of the tail was immersed into the water bath and the time was noted when the rat flicked the tail.

First group was given the vedantha bairava mathirai at a dose of 100mg/100gm body weight of the animal.

Second group was administered with paracetamol at a dose of 20mg/100gm of body weight. Third group was given 1ml of water and kept as control.

After the drug administration, the reaction time of each rat after ½ an hour, 1 hour and 1 ½ hour were noted in each group (when a rat fails to flick the tail, it should not be continued beyond 8 seconds to avoid injury) and the average was calculated.

The results of control group, standard group and drug treated group were tabulated and compared.
Study of Analgesic action by Tail Flick Method using Water Bath Method using the drug of Vedantha bairava mathirai

<table>
<thead>
<tr>
<th>Serial No</th>
<th>Name of drugs/group</th>
<th>Dose/100gm body weight</th>
<th>Initial Reading</th>
<th>After Drug Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>½ hr. Average</td>
</tr>
<tr>
<td>1</td>
<td>Vedantha bairava mathirai</td>
<td>100mg/1ml</td>
<td>2.5 Sec</td>
<td>3.0</td>
</tr>
<tr>
<td>2</td>
<td>Paracetamol</td>
<td>20mg/1ml</td>
<td>3.0 Sec</td>
<td>3.0</td>
</tr>
<tr>
<td>3</td>
<td>Water</td>
<td>1ml</td>
<td>2.5 Sec</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Inference: The test drug vedantha bairava mathirai has got moderate analgesic activity.
ANTI – INFLAMMATORY STUDIES
Acute Anti – Inflammatory Studies
Carrageenin induced Hind paw oedema method

Introduction:

In Siddha texts vedantha bairava mathirai is indicated in the condition of Vatha disease. So the following Pharmacological studies have been done.

Method:

Carrageenin induced Hind Paw Oedema method in albino rats.

Aim:

To evaluate the acute anti-inflammatory effect of vedantha bairava mathirai by Carrageenin induced Oedema method in albino rats.

Drug Preparation:

1gm of vedantha bairava mathirai was suspended in 10ml of hot water. Hot water was added for dissolving the test drug. This 1ml contains 100mg of the test drug.

Procedure:

Six healthy albino rats of either sex weighing between 80 – 100gm were selected. The volume of each hind paw was measured by using the mercury plethysmograph.
After the measurement of hind paw of all the rats, they were divided into three groups, each group containing two rats.

First group was given test drug vedantha bairava mathirai at a dose of 100mg / 100gm body weight of the animal. The second group was given Ibu brufen 20mg/100gm of body weight and the third group was kept as control by giving distilled water of 1ml / 100gm of body weight.

All the animals were given 0.1ml of 1% (w/v) of carageenin suspension which was injected subcutaneously in the plantar surface of hind paw of rats.

Three hours after carrageenin injection the hind paw volume was measured from the differences in the initial and final hind paw volume, the degree of the inflammation was calculated by taking the volume in the untreated control group as 100%.

The percentage of inflammation of the other group was calculated from the degree of the anti – inflammatory effect of the treated and the test groups were calculated.
Study of Acute Anti – Inflammatory by hind paw oedema method using Plethysmograph using the drug of vedantha bairava mathirai

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Name of Drug / Groups</th>
<th>Dose / 100gm body weight</th>
<th>Initial Reading average</th>
<th>Final Reading average</th>
<th>Mean Difference</th>
<th>Percentage Inflammation</th>
<th>Percentage Inhibition</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>vedantha bairava mathirai</td>
<td>100mg/1ml</td>
<td>0.5</td>
<td>1.0</td>
<td>0.5</td>
<td>62.5</td>
<td>37.5</td>
<td>Moderate action</td>
</tr>
<tr>
<td>2.</td>
<td>Ibu Brufen</td>
<td>20mg/1ml</td>
<td>0.8</td>
<td>0.85</td>
<td>0.05</td>
<td>6.25</td>
<td>93.75</td>
<td>Good</td>
</tr>
<tr>
<td>3.</td>
<td>Water</td>
<td>1ml</td>
<td>0.6</td>
<td>1.5</td>
<td>0.80</td>
<td>100.00</td>
<td>-</td>
<td>No action</td>
</tr>
</tbody>
</table>

**Inference:** The test drug has got moderate action when compared with that of the standard drug.
CHRONIC ANTI – INFLAMMATORY EFFECT OF VEDANTHA BAIRAVA MATHIRAI IN ALBINORATS BY COTTON PELLETS GRANULOMA METHOD

Aim:

Chronic anti inflammatory effects of Vedantha bairava mathirai.

Drug Preparation:

1 gm of Vedantha bairava mathirai was suspended in 10ml of hot water. Hot water was added for dissolving the test drug.

Procedure:

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

In this procedure the drug was given daily for 7 days. Before giving the drug cotton pellets each weighing 10mgm were prepared and sterilized in the auto clave for about one hour under 15 Hg atmospheric pressure.

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

The first groups of animals were given the test drug, Vedantha bairava mathirai in a dose of 100mg/100gm of body weight. The second
group was given Ibu-brufen at a dose of 20mg / 100gm body weight. Third group was kept as control group by giving distilled water of 1ml /10gm of body weight. On the 8\textsuperscript{th} day of the experiment, all the rats were sacrificed and cotton pellets surrounded by granulation tissues were removed and dried in Hot air oven at 55\degree C - 60\degree C. The concordant weight of granuloma for control group and treated group give an estimation of degree of inhibitory activity of test drug.
### Study of Chronic Anti-Inflammatory effect by Cotton Pellet method using the drugs of Vedantha Bairava Mathirai

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Name of Drugs/Groups</th>
<th>Dose/100 gm body weight</th>
<th>Pellet weight</th>
<th>Pellet weight of the Granuloma of drugs</th>
<th>Mean difference</th>
<th>Percentage inflammation</th>
<th>Percentage inhibition</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Vedantha Bairava Mathirai</td>
<td>100mg/1ml</td>
<td>10mg</td>
<td>149mg</td>
<td>-</td>
<td>60</td>
<td>40</td>
<td>Moderate action</td>
</tr>
<tr>
<td>2.</td>
<td>Ibu Brufen</td>
<td>20mg/1ml</td>
<td>10mg</td>
<td>56mg</td>
<td>-</td>
<td>22.4</td>
<td>77.6</td>
<td>Good</td>
</tr>
<tr>
<td>3.</td>
<td>Water</td>
<td>1ml</td>
<td>10mg</td>
<td>250mg</td>
<td>-</td>
<td>100</td>
<td>-</td>
<td>No</td>
</tr>
</tbody>
</table>

**Inference:** The test drug has got moderate action when compared with that of the standard drug.
ANTI PYRETIC ACTIVITY ON ALBINO RATS

BY

BEWER YEAST METHOD

Aim:

To study the anti pyretic activity of vedantha bairava mathirai.

Procedure:

Six albino rats were selected each weighing about 100 – 150gm and divided into 3 groups, 2 rats in each group. All the rats were made hyperthermic by Subcutaneous injection of 12% Suspension of yeast at a dose of 1ml / 100gm of body weight. 10hours later, the first group was given test drug orally at a dose of 100mg / 100gm body weight. Second group was given paracetamol 20mg / 100gm of body weight. The third group was given distilled water orally at a dose of 1ml water.

The mean rectal temperature for the 3 groups were recorded at 0 hour, 1.30 hours, 3 hours and 4.30 hours after the administration of drugs.

The difference between the mean temperature of the control group, the standard group and that of drug group was calculated and tabulated.
Study of Anti pyretic by yeast induced method using the drugs of Vedantha Bairava Mathirai

<table>
<thead>
<tr>
<th>Serial No.</th>
<th>Name of Drug / Groups</th>
<th>Dose / 100 gm body weight</th>
<th>Initial Temperature in centigrade</th>
<th>After Drug Administration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Vedantha Bairava Mathirai (3 Rats Average)</td>
<td>100mg/1ml</td>
<td>37.0°C</td>
<td>37.0</td>
<td>36.5</td>
</tr>
<tr>
<td>2.</td>
<td>Paracetamol</td>
<td>20mg / 1ml</td>
<td>36.5°C</td>
<td>35.5</td>
<td>35.0</td>
</tr>
<tr>
<td>3.</td>
<td>Water</td>
<td>1ml</td>
<td>36.5°C</td>
<td>36.5</td>
<td>37.5</td>
</tr>
</tbody>
</table>

**Inference**: The test drug vedantha Bairava Mathirai has moderate anti pyretic action.
CLINICAL ASSESSMENT

Azhal keel vayu is a disease mainly affecting the major weight bearing joints.

This type of arthritis produce socio – economic problems in human beings.

The main change of joints are wear and tear process in the components of joints producing pain, swelling, tenderness and limitation of movements.

There is no specific curative to restore the change in the joints.

In siddha literatarues , 10 types of keel vayu have been recogonised. The author of this dissertation has selected Azhal Keel Vayu. Azhal Keel Vayu is characterized by pain and swelling of the major joints difficulty in walking, crepitations of the joints etc., It may be roughly compared with Osteo arthritis for the clinical efficacy of vedantha bairava mathirai. For all these cases, full Clinical datas were recroded and they were diagnosed on the basis of siddha basic principles.

In order to assess the efficacy of vedantha bairava mathirai for Azhal Keel Vayu. It was tried clinically on 10 in patients and 30 out patients in Department of Gunapadam, Government Siddha Medical college Hospital, Palayamkottai. Patients of both sexes were selected for clinical trials.
The patients selected for clinical trial had the following criteria

1. Above 40 years
2. C/O pain
3. Swelling – measurement of the knee joint noted
4. Stiffness
5. Limitation of the movements
6. Joint tenderness
7. Crepitation of the joints
8. The routine investigations
   a. Total white blood cell count
   b. Differential count
   c. Erythrocyte sedimentation rate
   d. Haemoglobin estimation
   e. Blood sugar
   f. Blood urea
   g. Serum cholesterol and
   h. urine –albumin, sugar, deposit.
9. Radiological investigations helps in both diagnosis of
   a. Narrowing of joint space
   b. Osteophytes
   c. Subchondral cyst
   d. Subchondral sclerosis

The signs and symptoms vary in its severity from patient to patient.
Excluding Criteria:

Sudden onset of excruciating pain, marked swelling and redness of the big toe

1. younger age group
2. Migrating joint pain
3. Evening rise of temperature, loss of weight
4. Haemorrhagic effusion

Line of Treatment:

Vedantha bairava mathirai was administered 130mgm two times a day with honey after meals to each case for 20 – 40 days. The division of treatment varied according to the severity of signs and symptoms.

Diet restriction and medical advice:

1. The patients were advised to take easily digestible and highly nutritive foods
2. They were advised to avoid food like potato, curd, dhal etc which would increase the Vayu kutram
3. Advised to avoid cold damp climate
4. Obese patients were advised to reduce their weight in order to avoid stress.
5. To avoid stress, walking is reduced, if they walk they are advised to use the stick for support.
**Exercise for Strengthening Muscles around the knee joint:**

Simple exercise that promote flexibility and strengthen the muscles around the knee can go long way towards warding off problems. In many cases, these exercise can also help hasten recovery after a knee injury. Weak or tight muscles are an important cause of knee injuries.

Hence, it is advisable to make the time and effort to strengthen the muscle around the knee. However, if one is already suffering from pain in the knee, these exercise should be performed after consulting a doctor. To derive maximum benefit from the following exercise, they should be performed once or twice a day, repeating every exercise five to ten times for each knee.

**Thigh Firmer:**

Sit on the edge of a chair with one leg stretched out in front and the heel resting on the floor, tighten the muscle that runs across in front of the knee by flexing the toes back. Simultaneously, push the back of the knee
towards the floor and feel the stretch there as well as at the back of the ankle. Hold for 5 seconds. Repeat the same with the other leg.

**Knee flexion and extension:**

![Diagram of knee flexion and extension](image)

Sit straight on chair and bend the knee by pulling heel under the chair. Rest the foot on the toes. Hold for 5 seconds. Keep the foot relaxed and slowly raise it up to straighten the knee. Hold for 5 seconds and then slowly lower the foot to the floor. Repeat the same with the other leg.

**Straight Leg lift:**

![Diagram of straight leg lift](image)

Lie flat on the back with the stomach pulled in, the knee of one leg bent and the foot flat on the floor. Extend the other leg and lift it slowly as
far as is comfortably possible, without bending the knee. Hold for 5 seconds and slowly lower the leg. Repeat the same with the other leg.

**Response:**

In the clinical trials done for 40 patients good response is obtained in 85%, optimum fair response in 10% and poor response in 5% of cases.

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Response</th>
<th>No. of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Good</td>
<td>34</td>
<td>85</td>
</tr>
<tr>
<td>2.</td>
<td>Fair</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>3.</td>
<td>Poor</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>
DISCUSSION

The therapeutic efficacy of Vedantha bairava mathirai in the disease of Azhal keel vayu is related to exploring pharmacological action like anti-inflammatory, analgesic and antipyretic action through clinical trials. From various literatures and informations, the author has come to an idea about vedantha bairava mathirai and its efficacy in Azhal keel Vayu.

Biochemical and pharmacological studies, botanical aspects, gunapadam aspects and method of preparation of the drug are described in this dissertation.

Biochemical analysis showed that the drug contained sulphate, ferrous iron, unsaturated compound and amino acid, mercury.

In pharmacological studies, this drug had moderate analgesic, moderate acute and moderate chronic anti-inflammatory and moderate antipyretic activities. It helps to relieve pain (analgesic) and reduce the inflammation (anti-inflammatory) in soft tissues.

About 40 patients with Azhal keel vayu were taken in this study out of these,

- Good response: 85%
- Fair response: 10%
- Poor response: 5%

During the treatment, the patients had no signs and symptoms of toxic effects.
SUMMARY

The drug vedantha bairava mathirai has been taken to the study to establish its efficacy in Azhal keel vayu as an important aspect of this dissertation work.

The review of siddha literature about the drug and its significance in medicine in ancient days were collected. Informations about the drug from various literatures were also referred.

Bio chemical analysis revealed that the drug has got sulphate, ferrous iron, unsaturated compound, amino acid and mercury.

Pharmacological analysis established that the drug has got moderate analgesic, moderate acute and chronic anti – inflammatory and moderate antipyretic properties.

From the clinical assessment it is inferred that the drug has marked response in Azhal keel vayu. During the clinical trial the author has also inferred that the drug has no contraindications. The drug has no adverse effects.
CONCLUSION

This is concluded that the drug vedantha bairava mathirai has got moderate analgesic activity. Moderate acute and chronic anti-inflammatory activity and moderate anti pyretic activity effective in Azhal keel vayu without causing any adverse effects.
Gradation of Results

- Good Response: 80%
- Fair Response: 15%
- Poor Response: 5%
Gradation of Results

PERCENTAGE

RESPONSE

Good Response 85%
Fair Response 10%
Poor Response 5%
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