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Biochemical analysis of Siddha polyherbal drug Pazhathennai

Sankareswari.G[1]*, Sophiya T[2], Preethi.R[3] Lakshmi Kantham.T[4]

[1.]PG Scholar, Department of Maruthuvam, National Institute of Siddha, Chennai-47

[2.]PG Scholar, Department of Maruthuvam, National Institute of Siddha, Chennai-47

[3.]Associate professor and Head of the Department, Department of Maruthuvam, National Institute of Siddha, Chennai-47.

Address for correspondence:

Sankareswari G*

PG scholar,Dept of Maruthuvam, National Institution of Siddha, Chennai-47

E-mail: *sankariganesan2@gmail.com* Ph No:9344861977

Sophiya T[2]

PG scholar,Dept of Maruthuvam, National Institution of Siddha, Chennai-47

E-mail:*sophiyaesme22@gmail.com* Ph No:9944695606

Lakshmi kantham T[4]

Associate professor and Head of the Department, Dept of Maruthuvam, National Institution of Siddha, Chennai-47

E-mail:*drlakshmiramaswamy@gmail.com* Ph No:9444466880

Abstract

The Siddha system of medicine is an ancient and traditional medicine based on Pancha Bootham theory and taste-based treatment. The human body also presupposes the concept of Pancha Budha. An imbalance in Pancha Bootham in the human body affects the three basic humors (Vatham, Pitham, and Kapham). Asirana Pitham and other pitham disorders are treated with pazhathennai, a Siddha remedy. In modern medicine, gastroesophageal reflux disease (GERD) or gastroesophageal reflux disease (GORD) is a chronic gastrointestinal condition in which stomach contents flow continuously into the esophagus, resulting in regurgitation, heartburn, and bloating and causing foul odors. The ingredients present in the pazhathennai have anti-ulcer, wound healing properties, and potency to balance pithavatham. The biochemical analysis of pazhathennai was done in the biochemistry lab of the National Institution of Siddha, Chennai-47

Keywords: Pazhathennai, Siddha, Bio chemical analysis, Aseeranapitham, Gerd

Introduction

In the Siddha medical system, there are two categories of medicines: thirty-two internal and thirty-two external medicine. A traditional Siddha medication is pazhathennai. According to the Siddha system, medications are selected for diseases based on six categories of taste and panchaboothams, which are used to treat disturbed vatham, pitham, and kabam. Aseeranapitham (gastrointestinal reflux disease) in the 18-65 age group has clinical symptoms of regurgitation, heartburn, pain in the chest, bleeding, increased salivation, discomfort in the chest, early satiety, and pain in epigastricreagion. Pazhathennai is a Siddha drug taken from Siddha classical literature used in the treatment of aseeranapitham (gastosophageal reflux disease). The drug's biochemical characteristics are examined to determine its potency, and the results indicate the presence of carbonate, aluminum, zinc, magnesium, sodium, iron, phosphate, fluoride oxalate, and calcium biochemical constituents of Pazhathennai. Carbonate, aluminum, zinc, magnesium, alkaolids, phosphate, fluoride oxalate, and calcium are effectively used in the treatment of Aseeranapitham.

Materials and methods

Pazhathennai ingertients

(*Ref: Siddhaformulary of India-Part2)*

Table no:1 Required ingredients:

Drug name	Part use	Quantity
Kadukkai *Terminalia schebularetz*	Fruit	70g
Sitramanakuennai *Ricinus communis, Linn.*	Oil	1300ml
Elumichai *Citrus limon,Linn*.	Fruit	1300ml
Kumari *Aloebar badensis Mill*	Gel	1300ml

Source of raw drugs:

The above said raw drugs will be purchased from a well reputed country shop at chennai,The raw drugs will be authenticated by Botanist NIS, Chennai.The raw drugs will be purified and the medicine will be prepared in the Gunapadam Laboratory of NIS, Chennai as per SOP mentioned in Siddha Formulatory of India.

Purification of trial drugs:

- ✓ Elumichai(*Citrus limon,Linn. Burm.f.*)-Fruit
  The fruits are washed in running water rubbed with clean cotton cloth.
- ✓ Kumari (*Aloebar badensis, Mill*.)-Gel
  The leaf of aloe plants are rinsed well. The edges and part close to the stem are cut offand the skin is peeled off carefully. Now the pulp is cut into pieces and is rinsed in running water more than 10 times such that the yellowish and outer jell consistency goes off.

  Kadukkai (*Terminalia chebula,Retz*.)-Fruit

  Theseed is removed and only the outer part is to b taken.

- ✓ Sitramanakuennai (*Ricinus communis,Linn*.)-Oil

The oil is taken in an dry air tight container and buried sand such that half of thecontainer is within the sand and is exposed to sunlight for 2 days and is drained using a cloth.

Method of preparation:

Step-I:

1300ml(1 padi) of the following ingredients are taken and mixed well.

- Juice extracted from Elumichai (*Citrus limon,Linn.Burm.f.*)-Fruit
- Juice extracted from Kumari (*Aloebar badensis, Mill.*)-Gel
- Caster oil- Sitramanakuennai (*Ricinus communis,Linn.*)-Oil

Step-II:

70 g of kadukkai will be taken, finely powdered and ground with a small amount of the above mixure, to obtain a paste consistency.

Step-III:

The kadukkai paste is now added to the remaining mixure and mixed well.

Step-IV:

The mixure is now boiled in the flame till it reaches wax consistency (mezhgupatham)

Step-Vl:

The prepared medicine will be drained before cooling down, and will be stored in a dry air tight container.

Biochemical analysis:

Screening the trial drug pazhathennai to identify the biochemical properties present in the ingredient.

Chemicals and drugs:

An the chemicals used in this study were of analytical grade obtain from Department of Biochemistry,National Institution of Siddha,Chennai-47.

Methodology:

Preparation of extract:

After precisely measuring and filling a 250 ml clean beaker with 10 gram of Pazhathennaiennai, 250 ml of purified water was added. It was then thoroughly cooked for ten minutes. After that, it was chilled, filtered, and added 100 ml of distilled water to fill a 100 ml volumetric flask.

Qualitative analysis:

Table no:2

S. No	Experiment	Observation	Inference
1.	**Appearance of sample**	***Yellow coloured thick semi-solid material***	
2.	**Solubility** Little of the sample was shaken well and mixed with distilled water.	***Insoluble***	-
3.	**Action of heat:** A small amount of the sample was taken in a dry test tube and heated gently at first and then strong.	No brown fumes No white fumes evolved.	Absence of Nitrate
4.	**Flame test:** A small amount of sample was made into paste with con.HCL in a watch class and introduced into no luminous part of the Bunsen flame.	No bluish green flame appeared.	Absence of Copper

5.	**Ash test:** A filter paper was soaked into a mixture of sample and cobalt nitrate solution introduced into the Bunsen flame and ignited.	***Yellow coloured flame appeared***	***presence of Sodium***

Test for acid radicals

Table no:3

S. No	Experiment	Observation	Inference
1.	**Test for Chloride:** 2 ml of the above prepared solution was added with dil. HNO3 till the effervescence ceases. Then 2 ml of Silver nitrate solution was added.	***cloudy appearance present***	***Presence of Chloride***
2.	**Test for Phosphate:** 2 ml of the extract was treated with 2 ml of Ammonium molybdate Solution and 2 ml of Con. HNO3.	***Presence of cloudy yellow appearance***	***Presence of Phosphate***
3.	**Test for Carbonate:** 2 ml of the extract was treated with 2 ml of Magnesium sulphate Solution.	***Cloudy appearance present***	***Presence of Carbonate***
4.	**Test for Nitrate:** 1 drop of the substance was heated with Copper tunics and concentrated H2SO4 and viewed the test tube vertically down.	No characteristic changes of formed	Absence of Nitrate
5.	**Test for Sulphide:** 1 ml of substance was treated with 2 ml of Con. HCL.	No rotten egg smelling gas evolved	Absence of Sulphide
6.	**Test for Fluoride and Oxalate:** 2 ml of the extract was added with 2 ml of dis. Acetic acid and 2 ml Calcium chloride solution and heated.	***Cloudy appearance present***	***Presence of fluoride and Oxalate***
7.	**Test for Nitrite:** 3drops of the extract was placed on the filter paper on that 2 drops of Acetic acid and 2 drops of Benzidine solution was placed.	No characteristic changes observed	Absence of Nitrite
8.	**Test of Borate:** 2 pinches of the substances were made into paste by sulphuric acid alcohol (95%) and introduce into blue Flame.	Bluish yellow coloured flame not appeared.	Absence of Borate

Test for basic radicals

Table no:4

S. No	Experiment	Observation	Inference
1.	**Test for Copper:** One pinch of substance was made into paste with Con. HCl in a watch glass and introduced into the non- luminous part of the flame.	No blue coloured flame appeared	Absence of copper
2.	**Test for Aluminum:** To the 2 ml of the extract Sodium hydroxide was added in drops to excess.	***Cloudy appearance***	***Presence of Aluminium***
3.	**Test for Iron:** To the 2 ml of extract add 2 ml of ammonium thiocynate solution. To the 2 ml of extract add 2 ml ammonium Thiocynate solution and 2 ml of con HNO3 was added.	***Mild red colour appeared***	***Presence of Iron***
4.	**Test for Zinc:** To 2ml of the extract sodium hydroxide solution was added in drops to excess.	White precipitate was not appeared.	Absence of Zinc
5.	**Test for Calcium:** 2 ml of the extract was added with 2 ml of 4% ammonium oxalate solution.	***cloudy appearance***	***Presence of Calcium***
6.	**Test for Magnesium:** To 2 ml of extract sodium hydroxide solution was added in drops to excess.	White precipitate was not appeared.	Absence of Magnesium
7.	**Test for Ammonium:** To 2 ml of extract few ml of Nessler's reagent and excess of sodium hydroxide solution were added.	No brown colour appeared	Absence of ammonium
8.	**Test for Potassium:** 1 ml of substance was treated with 2 ml of sodium and then treated with 2 ml of cobalt nitrate in 30% glacial acetic acid.	***yellowish precipitate was obtained.***	***Presence of Potassium***
9.	**Test for Sodium:** 2 pinches of the substance was made into paste by using HCL and introduced into the blue flame of Bunsen burner.	***yellow colour flame appeared.***	***Presence of Sodium***
10.	**Test for Mercury:** 2 ml of the extract was treated with 2 ml of sodium hydroxide solution.	Yellow colour was not appeared.	Absence of Mercury
11.	**Test for Arsenic:** 2 ml of the extract was treated with 2 ml of sodium hydroxide solution.	Brownish red colour was not appeared.	Absence of Arsenic
12.	**Reducing sugar:**5ml of the benetics solution was treated with 8 drops extract is heated in a test tube for around two minutes and is then allowed to cool	No changes	Absence of reducing sugar.
13.	**Test for alkaloids**: Few drops of picric acid was added to 2ml of extract and mixed well	***Presence of yellow coour precipitate***	***Presence of alkaloids.***

Miscellaneous

Table no:5

S. No	Experiment	Observation	Inference
1.	**Test for reducing sugar:** 5 ml of Benedict's qualitative solution was taken in a test tube and allowed to boil for two minutes and added 8 to 10 drops of theextract and again boiled it for 2 minutes, the colour was noted	brick red colour developed.	Presence of Reducing sugar.
2.	**Test for alkaloids:** 2 ml of extract was treated with 2 ml of picric acid.	Yellow colour	***Presence of Alkaloid***
3.	**Test for Tannic acid:** 2 ml of extract was treated with 2 ml of ferric chloride solution.	Black colour Precipitate was not appeared.	Absence of Tannic acid.
4.	**Test for Unsaturated compounds:** To 2 ml of extract 2 ml of potassium permanganate solution was added.	Potassium permanganate was not de-coloured.	Absence of Unsaturated compounds
5.	**Test for Amino acids:** 2 drops of the extract were placed on a filter paper and dried well	No violet colour.	Absence of Amino acids
6.	**Test for type of compound:** 2ml of the extract was treated 2ml of ferric chloride solution.	No green colour No red colour developed. No violet colour . No blue colour developed.	Oxyquinole,epinephrine,pyrocatechol absent Anti pyrine, Aliphatic amino acid and meconic acid absent. Apomorphine, Salicylate, Resorcinol are absent. Morphine, Phenol cresol and Hydro quinine are absent.

Results and Discussion

The Biochemical analysis of test drug Pazhathennai was tubuated above in table. The test drug, Pazhathennai contains,

- Calcium,
- Phosphate
- Iron
- Sodium
- Pottasium
- Aluminium
- Alkaloids
- Fluoride oxalate
- Carbonate

Conclusion

Pazhathennai is siddha drug taken from siddha classical literature used in the treatment of aseeranapitham (gastroesophageal reflux disease). The drug screened for the its biochemical properties for the potency of Calcium, Phosphate, Iron, Sodium, Pottasium, Aluminium, Alkaloids, Fluoride oxalate, Carbonate are effectively used in the treatment of aseeranapitham

References

1. Agasthiyarvaithiyarathinasurukkam, Published by:S.P. Ramachanthiran ,Thamarai Noolgam, Secandedtion 1998, page no:88
2. M.I.Sorna Maariyammal, Siddha Marundhakiyalvidhigalum Seimuraigalum, Siddha maruthuvanoolveliyittuppirivu, India Maruthuvam-homeopathithurai, Chennai-600106 ,1stedition January 2010,page no:174
3. Kannusamypillai, chikitsaratnadeepamennum-vaithyanool- Part 1 ,Rathinanayakkar and sons, thirumagal atchagam,Chennai-79 Secandedtion 1992. pg no: 30,27
4. Dr. N.R. Rathasingh, MBBS, HPSM Indhiyamaruthuvapatharthasuthiilambagam, pg no: 479, 303.
5. Murugesamudhaliyar. (2002) Gunapadam part I. Directorate of Indian medicine and Homeopathy, Chennai, page no:158,69,201,207.
6. Maruthuvar K.N.Kuppusamy Mudhaliyar. (2016) Siddha Maruthuvam (Pothu). Directorate of Indian medicine and Homeopathy, Chennai page no:1013.

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