wjpmr, 2018,4(11), 144-147

SJIF Impact Factor: 4.639

WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.wjpmr.com

Research Article

ISSN 2455-3301

WJPMR

STANDARDIZATION OF SIDDHA POLY HERBAL FORMULATION – SHAYATHIRKU ENNAI

Dheebiga S. V.*[1], Gandhimathi S.[2], Meenakumari R.[3] and Muralidaran P.[4]

[1]PG Scholar, Department of Kuzhanthai Maruthuvam, Govternment Siddha Medical College, Chennai, Tamilnadu, India.
[2]Lecturer, Department of Kuzhanthai Maruthuvam, Govternment Siddha Medical College, Chennai, Tamilnadu, India.
[3]Professor and Head of the Department, Department of Kuzhanthai Maruthuvam, Govternment Siddha Medical College, Chennai, Tamilnadu, India.
[4]Professor and Head of the Department, Department of Pharmocology, C.L.Baid Metha College, Chennai, Tamilnadu, India.

***Corresponding Author: Dheebiga S. V.**

PG Scholar, Department of Kuzhanthai Maruthuvam, Govternment Siddha Medical College, Chennai, Tamilnadu, India.

Article Received on 29/08/2018 **Article Revised on 19/09/2018** **Article Accepted on 10/10/2018**

ABSTRACT

Siddha system of medicine is founded mainly on the basic principles of nature and its elements after careful and thorough study of the human system. The main aim of the study is to evaluate the Physico Chemical and Phyto Chemical standardization of the Siddha Polyherbal Formulation Shayathirku Ennai. The system has remarkable strength in treating diseases, especially in Paediatric age group also. One of such medicine is Shayathirku Ennai) which is mentioned in Agasthiyar Vaithiya Vallathi – 600) used in the treatment of Sura Peenisam (Sinusitis in children). It is a traditional Siddha formulation which consist of six major herbs. Samples are collected and subjected to standardization on the basis of Organoleptic Properties Physico and Phyto Chemicals. The result obtained from this study is very much useful data for my further research.

KEYWORDS: Siddha Medicine, Polyherbal Formulation, Shayathirku Ennai, Physico Chemical, Phyto Chemical.

INTRODUCTION

Siddha System of medicine is a traditional medicine which is originated in Tamil Nadu and being now a days it is practicing throughout India. Siddhars formulated so many medicines for many diseases. Core sources of Siddha Medicines Plants, Metals, Materials and Animal derivatives. There are three groups of drugs such as Plant products (Mula Vargam), Inorganic substances (Thathu Vargam), Animal products (Jeeva Vargam) which are characterized by the means of Taste, Quality, Potency, Post digestive Taste, Specific action.

Herbal medicine is also known as Botanical medicine or Phyto Medicine. One such Polyherbal Formulation is Shayathirku Ennai which consist of six major herbs Poovanthi Pattai, Kadukkai, Kasthuri Manjal, Vanniver, Karunjeeragam, Eranda Ennai. Standardization of such medicine is essential factor to asses quality, safety and efficacy of the drugs. One of the disease occurring recurrently in children is Sura Peenisam (Sinusitis in children). It is due to many causes such as any microbial infections or a result of allergies (Pollution, Cold Exposure, etc.).

According to Madhalai Noi Thoguthi Part – I, the clinical features of Sura Peenisam may compared to sinusitis in children are Nasal Discharge, Inflammation of the mucous membrane of Sinusus, Nasal block, Heaviness of head. Now a days it is a very common disease in children world wide especially in developing countries like India. It affecting more than 14 percentage of School going children leads to poor day to day performance or activities.

The present study was carried out to create a scientific standardization of Shayathirku Ennai in the treatment of Sura Peenism (Sinusitis in Children).

MATERIALS AND METHODS

Source of Raw Drugs

- Poovanthi Pattai is collected from Thiruvannamali District.
- Vanni Ver is collected from Vadivudai Amman Kovil, Thiruvettriur
- The other raw drugs is procured from a well reputed Indigenous drug shop from Parrys corner, Chennai.
- All raw drugs were authenticated by the Pharmacognosist, SCRI Chennai.

Purification of the raw drugs
Raw drugs are purified as mentioned in Sikicharathna Deepam Sarakku Suthi Muraigal.

Ingredients

S.no	Name of the drug	Part used	Botanical name	Quantity
1	Poovanthi Pattai	Stem Bark	*Sapindus trifoliatus*	50 palam (1750) gms)
2	Eranda Ennai	Seed Oil	*Ricinus communis*	1 Padi (1.3 ltr)
3	Kadukkai	Fruit	*Terminalia chebula*	1 Palam (35 gms)
4	Kasthuri Manjal	Rhizome	*Curcurma aromatic*	1 Palam (35 gms)
5	Vanni Ver	Root	*Prosopis spicigera*	½ Palam (17.5 gms)
6	Karunjeeragam	Seeds	*Nigella sataiva*	½ Palam (17.5 gms)

Method of preparation
Poovanthi Pattai decoction is made by taking poovanthi pattai in a mud pot, 1.4 liters of water is added and boiled till the decoction is reduced upto 1.3 liters. To this decoction equal quantity of Eranda Ennai is added. Kasthuri Manjal, Kadukkai, Vanniver are made into a paste in stone morter and the paste is mixed into the above mentioned decoction and Ennai. This mixture is boiled till the mezhugu patham (Waxy Consistency) is obtained and Karunjeeraga powder is added at the end of this Ennai.

Therapeutic Dosage – 5ml for 8 to 12 years twice a day.

Physico Chemical Analysis
Organoleptic Evaluation

Parameter	Observation
Color	Yellowish Color
Smell	Characteristic Odour
Touch	Oily
Appearance	Translucent

Preparation of standard solution
0.2g of ferric ammonium sulphate was dissolved in distilled water containing 10ml of concentrated hydrochloric acid and the volume was made up to 250ml with distilled water 3. From this stock solution 1, 2, 3, 4 & 5ml was pipette out into 5 different 50ml volumetric flask and 5ml of 10% aq. hydroxyl ammonium chloride solution was added and the pH was adjusted between 3 to 5 using 2M sodium acetate buffer solution and 4ml of 1, 10-phenanthrolin was added and finally the volume was made up to 50ml with distilled water. After 15-20 min. the absorbance was noted at 515nm. The standard curve of concentration Vs absorbance was plotted.

Preparation of Test Solution
0.21g of test sample was taken with 50ml of 6N hydrochloric acid and boiled for 2-3 min. Then it was filtered and the volume was made up to 250ml with distilled water. From this 5ml of solution was pipette out into 50ml volumetric flask and the same procedure was followed as in the preparation of standard solution. After 15-20 min. the absorbance was noted at 515nm. From the absorbance the corresponding concentration was determined by extrapolation of calibration curve.

Physico Chemical Evaluation
Percentage Loss on Drying
10gm of test drug was accurately weighed in evaporating dish.The sample was dried at 105^{o}C for 5 hours and then weighed.

Percentage loss in drying = Loss of weight of sample/ Wt of the sample X 100

Determination of pH
Sample being oily in nature the direct litmus evaluation method was adopted to check the pH of the sample.

Determination of specific gravity
Fill the dry sp. gravity bottle with prepared samples in such a manner to prevent entrapment of air bubbles after removing the cap of side arm. Insert the stopper, immerse in water bath at 50^{O}C and hold for 30 min. Carefully wipe off any oil that has come out of the capillary opening. Remove the bottle from the bath, clean and dry it thoroughly. Remove the cap of the side and quickly weigh. Calculate the weight difference between the sample and reference standard.

Determination of Iodine value
About 20 gm of oil was transferred into Iodine flask. To which 10 ml of chloroform was added and warmed slightly and cooled for 10 minutes. Followed by this about 25 ml of Wiji's solution was added in the same flask and shaken well. The flask was allowed to stand for 30 mins and refrigerated for anhour.T About 10 ml of KI solution was added to this and titrated against 0.1 N Sodium thiosulphate solutions until the appearance of yellow colour. 1 ml of starch indicator was added and again titrated against the sodium thiosulphate solution from the burette. Disappearance of blue colour indicates end point. Repeat the above procedure without taking sample and note the corresponding reading for blank titration.

Determination of saponification value
About 2 gm of test sample was transferred into the round bottomed flask. To this about 20 ml of 0.5 N alcoholic KOH solutions was added to the round bottomed flask. Repeatthe same procedure with out taking the sample for blank titration. Reflux both sample and blank round bottomed flasks for 1 hour. After reflux, allow both the

round bottomed flasks to cool. Titrate the samples using 0.5 N HCl with phenolphthalein indicator. The disappearance of pink indicates the end point.

Phytochemical Analysis
The Hydro-alcoholic extract of drug was subjected to preliminary phytochemical screening for the presence or absence of phytoconstituents by the following methods.

Test for alkaloids
The extract was treated with dilute hydrochloric acid and filtered. The filtrate is used in the following tests.
Mayer's reagent (Potassium Mercuric Iodine Solution) 0.5ml of the extract was treated with Mayer's reagent and the appearance of cream color indicates the presence of alkaloid.

Test for carbohydrates
Molisch's test
The extract was treated with 3ml of alpha-napthol in alcohol and concentrated sulphuric acid was added along the sides of the test tube carefully. Formation of violet color ring at the junction of two liquids indicates the presence of carbohydrates.

Test for phenols
The extract was treated with neutral ferric chloride solution. The appearance of violet indicates the presence of phenols.

Test for flavonoid's
5ml of extract solution was hydrolysed with 10%v/v sulphuric acid and cooled. Then, it is extracted with diethyl ether and divided into three portions in three separate test tubes. 1ml of diluted sodium carbonate, 1ml of 0.1N sodium hydroxide, and 1ml of strong ammonia solution were added to the first, second and third test tubes. In each test tube, development of yellow color demonstrated the presence of flavonoids.

Test for glycosides
The extract was dissolved in the glacial acetic acid and few drops of ferric chloride solution was added, followed by the addition of concentrated sulphuric acid, formation of red ring at the junction of two liquids indicates the presence of glycosides.

Test for saponins
1ml of the extract was diluted to 20ml with distilled water and shaken well in a test tube.The formation of foam in the upper part of the test tube indicates the presence of saponins.

Test for terpenes
The extract was treated with tin and thionyl chloride, appearance of pink color indicates the presence of terpenes.

Test for sterols
The extract was treated with 5% potassium hydroxide solution; appearance of pink color indicates the presence of sterols.

Test for quinones
To the 1ml of extract, 1ml of conc.sulphuric acid was added. Formation of red colour indicates the presence of quinones.

RESULTS

Physiochemical evaluation report

S.no	Parameter	Result
1	Specific gravity	0.821g/cm^3
2	Viscosity at 50° C	0.6533 mPa.s (millipascal-second)
3	Refractive index	1.47
4	Weight per ml (gm/ml)	12.2±0.33
5	Iodine value	101
6	Saponification value (mg of KOH to saponify 1gm of fat)	176
7	Total iron content (mg/ml)	-
8	Loss on drying at 105° c	10.23 % by mass
9	Viscosity	35.33 mm^2 /sec
10	PH	4.8

Phyto chemical analysis

S.no	Phyto-components	Results
1	Alkaloid	+
2	Carbohydrate	-
3	Glycoside	+
4	Saponins	+
5	Phytosterols	+
6	Phenols	+
7	Flavonoids	+
8	Diterpenes	+
9	Quinones	+
10	Triterpenes	+

(+) Indictes Positive, (-) Indicates Negative

CONCLUSION

Hence the study reveals that the trial drug Shayathirku Ennai possess significant functional group and Phyto components which is concluded very much effective in the treatment of Sura Peenisam (Sinusitis) in children. Hence our results contributed towards the validation of the Shayathirku Ennai in the treatment of Sura Peenisam (Sinusitis in Children) with this, we have to work more in future.

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