International Journal of Current Advanced Research
ISSN: O: 2319-6475, ISSN: P: 2319-6505, Impact Factor: 6.614
Available Online at www.journalijcar.org
Volume 10; Issue 04 (A); April 2021; Page No.24096-24099
DOI: http://dx.doi.org/10.24327/ijcar.2021.24099.4777

Research Article

STANDARDIZATION OF COMPOUND SIDDHA DRUG – AYNKAAYA CHOORANAM FOR THE TREATMENT OF KATTU MAANTHAM

Radha B., Geethasre Balaji and Shyamala K

Department of Kuzhanthai Maruthuvam, GSMCH, Palayamkottai

ARTICLE INFO

Article History:
Received 4th January, 2021
Received in revised form 25th February, 2021
Accepted 18th March, 2021
Published online 28th April, 2021

Key words:

Drug standardization, PLIM guidelines, KattuMaantham, Aynkaaya Chooranam

ABSTRACT

In siddha system, kuzhanthai Maruthuvam (pediatrics) has a significant role in its treatment aspects and disease classification. Many common diseases are seen in pediatric age group. Maantham is one among the disease which hinders child growth and development. In siddha Maanthamis stated as**"** Uruvanilayil, udalnilayilmantham**".** It is basically classified into 31 types. Kattumaantham is one among the 31 types. Aynkaaya Chooranam is specially mentioned in the text for all types of maantham. Drug standardization is very much essential nowadays to prove the therapeutic efficacy of the Siddha medicine as per PLIM guidelines. Both qualitative and quantitative study of the compound drug is considered as a great tool to access the medicine therapeutic standard worldwide. This review article will help to provide details of information about the organoleptic characters, bio chemical and physiochemical analysis of the compound herbal ingredients of Aynkaaya Chooranam.

INTRODUCTION

Standardization is the process of implementing and developing technical standards. Usually, standardization helps to maximize the compatibility, interoperability, safety, repeatability or quality of the medicine. It is very essential to standardize the herbal compound drug medicine to know its full potential and efficacy towards the mankind among various diseases. In Siddha system of medicine food and lifestyle modification pave a way to numerous diseases both in adults and children. These lifestyle modifications alter our three-humor called Vatham, Pitham, Kabham (MoondruThodangal) finally leading us in misery called "Disease". Maantham in children is usually caused due to changes in dietary pattern of our day-to-day life. Nowadays it is very common in children, which hinders child physical and mental development in various aspects. Kattu Maantham is one among the maantham which has following clinical characteristics – Abdominal pain and distention, constipation, oliguria, anorexia, low grade fever and general tiredness. Aynkaaya Chooranam is used to relieve these symptoms in children. Certain test parameters are given for the chooranam (fine powder) by PLIM guidelines to ensure its standards. This review article will help to provide details of information about organoleptic, bio chemical, phytochemical analysis of Aynkaaya Chooranam.

Corresponding author:* **Radha B
Department of Kuzhanthai Maruthuvam, GSMCH, Palayamkottai

MATERIALS AND METHODS

Drug Selection

This present study, the herbal formulation of compound drug Aynkaaya Chooranam preparation was taken for Kattu Maantham mentioned in siddha literature Pillai PiniMaruthuvam Part II, (KaieluthuPrathi, BalaBodhini – 283) Indian Medicine and Homeopathy, Page no: 12,13.

Ingredients of Aynkaaya Chooranam

Collection of Raw Drugs

All the raw drugs were brought from a well reputed country shop (Rajendra raw drug store) situated in Thakkalai, Kanyakumari District.

Aynkaaya Chooranam

Zingiber officinale	*70 gm*
Piper longum	*70 gm*
Piper nigrum	*70 gm*
Carum copticum	*70 gm*
Nigella sativa	*70 gm*
Hyoscyamus niger	*70 gm*
Syzygium aromaticum	*70 gm*
Cinnamomum verum	*70 gm*
Eletteria cardamomum	*70 gm*
Curcuma longa	*70 gm*
Terminalia chebula	*70 gm*
Embelia ribes	*70 gm*
Piper longum	*70 gm*
Abies spectabilis	*70 gm*
Quercus infectoria	*70 gm*
Glycyrrhiza glabra	*70 gm*
Anacyclus pyrethrum	*70 gm*
Wrightia tinctoria	*70 gm*
Terminalia bellerica	*70 gm*
Foeniculum vulgare	*70 gm*
Curcuma aeruginosa	*70 gm*
Piper cubeba	*70 gm*
Coriandrum sativum	*70 gm*
Myristica fragrans	*4 gm*
Myristica fragrans	*4 gm*
Fel bovinum purifactum	
(purified ox gall)	*4 gm*

Identification and Authentication of the Drug:

All the ingredients of the Aynkaaya Chooranam were initially identified and authenticated by the Head of the department of Gunapadam in Government Siddha MedicalCollege, Palayamkottai.

Purification of Drugs:

Purification process is done as per classical Siddha literatures.

Preparation of the Trial Compound Drug Aynkaaya Chooranam

The above-mentioned drugs are grinded into fine powder and sieved (vasthrakaayam). Then the finely powdered drugs are mixed well and kept separately in a neat dry air tight container.

Administration of the Drug

Form of medicine - Chooranam (finely powdered)

Route of Administration - Internal (oral route administration)
Dosage - 135 mg to 1gm (based on the age and weight of the child dosage may vary) / Twice a day after food
Adjuvant - Honey
Indication - KattuMaantham.

Organoleptic Characters

State, Nature, Odor, Consistency, flow Property, appearance of the drug and solubility of the drug were noted. The organoleptic character analysis was done by Noble research solutions Pvt. Ltd., Chennai, India.

Physicochemical Analysis of Aynkaaya Chooranam

Physicochemical analysis studies of the powdered trial drug have been done according to PLIM guidelines for standardization and evaluation of Indian medicine. The analysis such asloss on drying, determination of total ash, water soluble ash, acid insoluble ash, water and alcohol soluble extract were done at Noble research solutions Pvt. Ltd., Chennai, India. Each analysis is done three times and the mean value is calculated.

Percentage Loss on Drying

Test drug was accurately weighed in evaporating dish. The sample was dried at 105^{o}C for 5 hours and then weighed.

Determination of Total Ash

Test drug was accurately weighed in silica dish and incinerated at the furnace a temperature 400 ºC until it turns white in color which indicates absence of carbon. Percentage of total ash will be calculated with reference to the weight of air-dried drug.

Determination of Acid Insoluble Ash

The ash obtained by total ash test will be boiled with 25 ml of dilute hydrochloric acid for 6mins. Then the insoluble matter is collected in crucible and will be washed with hot water and ignited to constant weight. Percentage of acid insoluble ash will be calculated with reference to the weight of air-dried ash.

Determination of Alcohol Soluble Extractive

Test sample was macerated with 100 ml of Alcohol in a closed flask for twenty-four hours, shaking frequently during six hours and allowing it to stand for eighteen hours. Filter rapidly, taking precautions against loss of solvent, evaporate 25 ml of the filtrate to dryness in a tared flat bottomed shallow dish, and dry at 105ºC, to constant weight and weigh. Calculate the percentage of alcohol-soluble extractive with reference to the air-dried drug.

Determination of Water-Soluble Extractive

Test sample was macerated with 100 ml of chloroform water in a closed flask for twenty-four hours, shaking frequently during six hours and allowing it to stand and for eighteen hours. Filter rapidly, taking precautions against loss of solvent, evaporate 25 ml of the filtrate to dryness in a tared flat bottomed shallow dish, and dry at 105ºC, to constant weight and weigh. Calculate the percentage of water-soluble extractive with reference to the air-dried drug.

Phytochemical Screening Analysis of Aynkaaya Chooranam

The phytochemical screening analysis was carried out for the extract of AynkaayaChooranam asper the standard procedure by the experts of Biochemistry Department of Government Siddha Medical College, Palayamkottai.

Preparation of the Extract

5 gms of the drug was weighed accurately and placed in a 250 ml clean beaker then 50 ml of distilled water is added and

dissolved well. Then it is boiled well for about 10 minutes. It is cooled and filtered in a 100 ml volumetric flask and then it is made to 100 ml with distilled water. This fluid is taken for analysis.

Test for Calcium

2 ml of the above prepared extract is taken in a clean test tube. To this add 2 ml of 4 % Ammonium oxalate solution. Formation of white coloured precipitate indicates the presence of Calcium.

Test for Sulphate

2 ml of the extract is added to 5 % Barium chloride solution. Formation of white coloured precipitate indicates the presence of Sulphate.

Test for Chloride

The extract is treated with Silver nitrate solution. Formation of white coloured precipitate indicates the presence of Chloride.

Test for Carbonate

The substance is treated with concentrated HCl. Formation of brisk effervescence indicates the presence of Carbonate.

Test for Starch

The extract is added with weak iodine solution. Formation of blue colour indicates the presence of Starch.

Test for Ferric Iron

The extract is acidified with Glacial acetic acid and Potassium ferrocyanide. Formation of blue colour indicates Ferric iron.

Test for Ferrous Iron

The extract is treated with Concentrated Nitric acid and Ammonium thiocyanate solution. Formation of blood red colour indicates the presence of ferrous iron.

Test for Phosphate

The extract is treated with Ammonium molybdate and concentrated nitric acid. Formation of yellow colour precipitate indicates the presence of Phosphate.

Test for Albumin

The extract is treated with Eshbach's reagent. Formation of yellow colour precipitate indicates the presence of Albumin.

Test for Tannic Acid

The extract is treated with Ferric chloride. Formation of blue-black coloured indicates the Presence of Tannic acid.

Test for Unsaturation

Baeyer's Test Potassium permanganate solution is added to the extract. If it gets decolourised, it indicates the presence of unsaturated compounds.

Test for the Reducing Sugar

5 ml of Benedicts qualitative solution is taken in a test tube and allowed to boil for 2 minutes and add 8 – 10 drops of the extract and again boil it for 2 minutes. If it gets any colour , it indicates the presence of reducing sugar.

Test for Amino Acid

One or two drops of the extract is placed on a filter paper and dried well. After drying, 1% Ninhydrin is sprayed over the filter paper and again dried. If it gets violet colour, it indicates the presence of Amino acid.

Test for Zinc

The extract is treated with Potassium Ferrocyanide. Formation of white coloured precipitate indicates the presence of Zinc.

RESULTS AND DISCUSSION

Organoleptic Characters

State	Solid
Nature	Fine
Odor	Aromatic
Touch/ Consistency	Soft
Flow property	Non – free flowing
Appearance	Intense yellowish brown

Solubility Profile

S.No	Solvent Used	Solubulity/Dispersibilty
1	Chloroform	Soluble
2	Ethanol	Soluble
3	Water	Soluble
4	Ethyl acetate	Soluble
5	DMSO	Soluble

Physicochemical analysis

Loss on Drying (%)

Moisture content of the drug may elicit the stability and shelf – life and the maximum stability and shelf life is seen in low moisture content. Loss on drying of AynkaayaChooranam is 6. 82 ± 0.30.

Total ash (%)

Ash value is a parameter to assess the degree of purity of the drug. It constitutes the inorganic residues obtained after combustion of the drug. Ash value expressed by AynkaayaChooranam is 13.17 ± 0.95.

Acid Insoluble ash (%)

The amount of siliceous matter present in the plant will be assessed by acid insoluble value. Acid insoluble ash of AynkaayaChooranam is 0.16 ± 0.02.

Alcohol Soluble extract value/ Water soluble extract Value (%)

Evaluation of crude drugs is based on its extractive values different solvents are used to assess quality, purity and to detect adulteration due to incorrectly processed drugs and exhausted drugs. Low values indicates the exhausted drugs. Alcohol soluble extractive/ water soluble extractive of the drug AynkaayaChooranam is 27.2 ± 2.35 and is 38.27± 2.43.

Phytochemical Analysis

The phytochemical analysis of AynkaayaChooranam reveals the presence of Calcuim, Sulphate, Chloride, Starch, Tannic acid and Unsaturated Compound.

S No	Phytochemicals	Result
1	Calcuim	Present
2	Sulphate	Present
3	Chloride	Present
4	Carbonate	Absent
5	Starch	Present
6	Ferric Iron	Absent
7	Phosphate	Absent
8	Albumin	Absent
9	Tannic acid	Present
10	Unsaturated compounds	Present
11	Reducing sugar	Absent
12	Amino acid	Absent
13	Zinc	Absent

CONCLUSION

Organoleptic characters of AynkaayaChooranam reveals that the drug is soft, fine, non - free flowing, intense yellowish brown colour and aromatic. Physicochemical and phytochemical property of AynkaayaChooranam reveals that the drug is safety and effective. Further preclinical and clinical trials should be done in future to know the value of the drug.

Acknowledgement

My sincere thanks to the Head of the Department, Prof.Dr.D. K. Soundararajan MD(s), Department of KuzhanthaiMaruthuvam, Government of Siddha Medical College and Hospital, Palayamkottai, Tirunelveli, and Dr. K. Shyamala MD(s), Lecturer, Grade II, Department of KuzhanthaiMaruthuvam, Government of Siddha Medical College and Hospital, Palayamkottai, Tirunelveli and other lecturers of the department for their guidance and support.

Reference

1. Pillai PiniMaruthuvam-Part 2 (kaieluthuprathi, balabodhini- 283) Indian Medicine and Homeopathy, page -12, 13.
2. KuzhanthaiMaruthuvam (BalaVagadam)-Dr. K.S.Murugesamudaliar, pg: 62,92.
3. Gunapadam Mooligai, Dr. K.S. Murugesamudaliar
4. Gunapadamthaathujeevam, Dr. R.Thiyagarajan.
5. Indian pharmacopeia I Volume I, Government of india, Ministry of Health and Family welfare, Indian Pharmacoepia commission, 2014.
6. Pharmacopoeial laboratory for indian medicine (PLIM) Guideline for standardization and evaluation of indian medicine which include drugs of Ayurveda, Unani and Siddha systems. Department AYUSH, Ministry of health & Family welfare, Govt. of India.

How to cite this article:

Radha B *et al* (2021) 'Standardization of Compound Siddha Drug – Aynkaaya Chooranam For The Treatment of Kattu Maantham', *International Journal of Current Advanced Research,* 10(04), pp. 24096-24099.
DOI: http://dx.doi.org/10.24327/ijcar.2021.24099.4777

****