IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

PHYSIOCHEMICAL ANALYSIS IN STANDARDIZATION OF SIDDHA POLYHERBAL DRUG VATHAROGA CHOORANAM

[1]Dr.T.Sathya Nandini,[2]Dr.P.Dharani,[3]Dr. U.Chitra MD(S)

[1&2]Pg scholar, Pg Pothu Maruthuvam,Government Siddha Medical College,Chennai-106.

[3]Lecturer-Pg Pothu Maruthuvam,Government Siddha Medical College,Chennai-106.

Abstract:**Introduction**:Siddha Medicine,a traditional system for Health and Wellness,has its roots in ancient India,particularly in the state of Tamilnadu.This ancient wisdom has been passed down through generations of siddha practioners ,offering a rich distinctive contribution to the world of traditional medicine.Among these formulations,Vatharoga Chooranam is one of the Polyherbal formulation,which is said to be prescribed for all types of Vatha diseases in classical Siddha Literature.Saganavatham (Cervical Spondylosis) is one among the 80 types of Vatha diseases.Cervical Spondylosis and other types of musculoskeletal disorders will be benefitted from this medicine.Standardization of drugs and publications are seen as keys to spread authenticity in today's evidence based practice of medicine.Vatharoga Chooranam was standardized using PLIM criteria.**Materials and Methods**:Vatharoga Chooranam was made in accordance with GMP regulations.Physio-chemical analysis,HPTLC,TLC investigation and the finding of organoleptic qualities are all part of drug standardization.The Standardization of drugs was conducted at Noble Research Solution's facility in accordance with PLIM criteria.**Results**:Research findings indicate there are six peaks in the HPTLC screening graph.Other Characteristics include loss of drying(7.96%),total ash value(3.23%),acid insoluble ash(0.04%),water soluble extractive (23.67%),alcohol soluble extractive(10.13%)and pH 6.40.**Concusion**:The Published data from this study will inform and support future clinical research and standardization efforts ,potentially leading to further exploration of the medicine Vatharoga Chooranam in musculoskeletal disorders.**Key Words**:Vatharoga

Chooranam,Cervical Spondylosis,Pharmacopeial laboratory for Indian Medicine,Noble Research Solutions,High Perfomance Thin Layer Chromatography.

Index Terms-Vatharoga Chooranam,Cervical Spondylosis,HPTLC,PLIM.

INTRODUCTION

Siddha medicine, an antiquated yet vibrant system of health and wellness, has its genesis in the ancient Indian subcontinent, particularly in the Tamil Nadu region. With a rich historical legacy spanning over two millennia, Siddha medicine is predicated on the concept of symbiosis between the human body and the natural world. This holistic paradigm is predicated on the equilibrium of three humors - vadham, pitham, and kabham. It has a rich history of utilizing plants and natural substances for healing and wellness.Among many siddha formulations,Vatharoga Chooranam a polyherbal formulation has been traditionally employed to alleviate Vatha related conditions, including cervical spondylosis and other musculoskeletal disorders. In recognition of Siddha medicine's potential, the WHO has advocated for the identification of active ingredients and standardization of drug studies in accordance with PLIM guidelines. This standardization endeavor not only legitimates Siddha medicine but also facilitates its integration into modern healthcare. Currently, Vatharoga Chooranam is undergoing evaluation, encompassing assessments of its organoleptic properties, physical characteristics, and phytochemical composition through qualitative and quantitative analysis.

MATERIALS AND METHODS

The polyherbal formulation was identified in the Siddha Classical Literature "SARABENDIRAR VAITHIYA MURAIGAL SIROROGA SIGITCHAI , PAGE NO:[119][1]".The ingredients for this formulation are included in Table-1[1-6].

TABLE-1 INGREDIENTS OF VATHAROGA CHOORANAM

S.NO	INGREDIENTS	BOTANICAL NAME	QUANTITY
1	[2]Kadukurogini	*Picrorhiza Scrophulariflora*	3 Palam
2	[3]Karkadagasingi	*Rhus succedanea*	3 Palam
3	[4]Kandankathiri ver	*Solanam Burattense*	1 Palam
4	[5]Jatamanjil	*Nardostachys grandiflora*	1 Palam
5	[6]Siruthekku	*Clerodendrum serratum*	1 Palam
6	Indhuppu	*Sodium Chloride impura*	1 Palam

COLLECTION,IDENTIFICATION AND AUTHENTICATION OF THE DRUG

All necessary plant materials were procured from a raw drug shop located at Parry's Corner in Chennai, Tamil Nadu. These materials were subsequently verified and confirmed by botanical and pharmacological experts at the Government Siddha Medical College Hospital in Arumbakkam, Chennai – 106.

PURIFICATION OF THE DRUGS

All the drugs were purified according to Siddha Literature.

PREPARATION OF THE DRUG

PROCEDURE:

All the purified ingredients listed in Table 1 (1-6) were taken in above mentioned quantity, mildly roasted, pounded and finely powdered.The obtained powder was sieved well using sieving cloth.Then Vatharoga Chooranam was stored in an air tight container.

STANDARDIZATION OF THE DRUG

1.Organoleptic Characters of Vatharoga Chooranam

Vatharoga Chooranam appeared to be dark brownish in colour with a characteristic bitter taste and had a characteristic odour . The results were tabulated in the following table.

Table 2-Organoleptic Characters of Vatharoga Chooranam

State	Solid
Nature	Fine powder
Odour	Characteristic
Touch	Soft
Flow Property	Free flowing
Appearance	Dark Brownish

Table 3-Solubility Profile

S.No	Solvent Used	Solubility / Dispersibility
1	Chloroform	Insoluble
2	Ethanol	Soluble
3	Water	Soluble
4	Ethyl acetate	Insoluble
5	DMSO	Soluble

2.PHYSIOCHEMICAL ANALYSIS OF VATHAROGA CHOORANAM

The preliminary physicochemical screening test was carried out for Vatharoga chooranam as per the standard procedures mentioned here under[8-10]

Percentage Loss on Drying

Test drug was accurately weighed in evaporating dish. The sample was dried at 105°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°C 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 105°C, 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 105°C, to constant weight and weigh. Calculate the percentage of water-soluble extractive with reference to the air-dried drug.

pH determination

Required quantity of test sample was admixed with distilled water and the subjected to screening using pH meter.

Table 4-Physico-Chemical Analysis of Siddha Formulation Vatharoga Chooranam

S.No	Parameter	Mean (n=3) SD
1.	***Loss on Drying at 105 °C (%)***	7.96 ± 0.351
2.	***Total Ash (%)***	3.23 ± 0.25
3.	***Acid insoluble Ash (%)***	0.04 ± 0.006
4.	***Water soluble Extractive (%)***	23.67 ± 3.78
5.	***Alcohol Soluble Extractive (%)***	10.13 ± 1.45
6.	***pH***	6.40

3.Identification-TLC/HPTLC

FIGURE -1 TLC Visualization of Vathroga Chooranam at 360nm

FIGURE 2-3D -CHROMATOGRAM

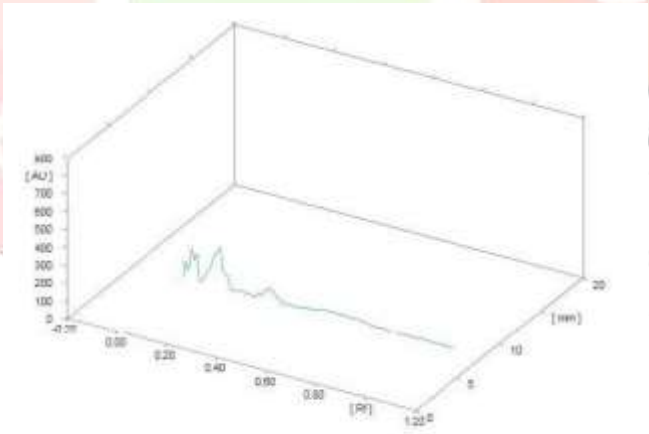
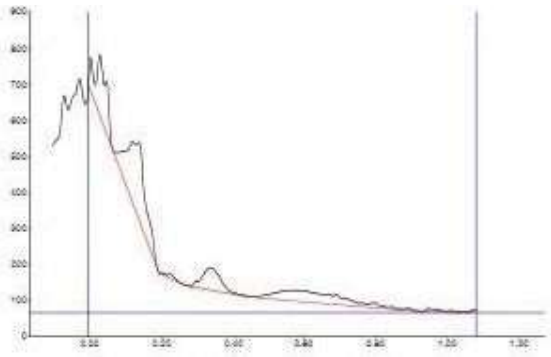
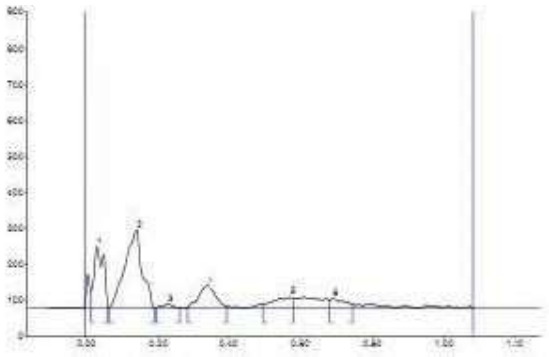


Table - 5 Analysis of High-Performance Thin Layer Chromatography (HPTLC) of Siddha Formulation Vatharoga Chooranam





Peak Table

Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %
1	0.01	48.3	0.03	171.0	32.76	0.06	3.9	2559.8	21.33
2	0.06	1.4	0.14	217.3	41.62	0.19	0.5	5890.3	49.08
3	0.20	0.0	0.23	13.0	2.48	0.26	0.2	178.5	1.49
4	0.28	0.6	0.34	63.7	12.20	0.40	4.4	1801.0	15.01
5	0.50	10.9	0.57	30.5	5.85	0.58	27.3	943.4	7.86
6	0.68	22.3	0.69	26.6	5.09	0.75	10.0	629.3	5.24

DISCUSSION:

This study is aimed to characterize the physiochemical properties of Vatharoga Chooranam a Siddha Polyherbal formulation using variety of techniques.Physiochemical characters such as ash content (3.23%) suggests the presence of minerals and non-combustible earthy materials in Vatharoga Chooranam.This value provides a baseline for further investigation.Low acid-insoluble ash (0.04%) indicates minimal silica content,which aligns with quality standards for herbal drugs.Loss on drying (7.96%) indicates a relatively low moisture content, suggesting good stability and potential for a longer shelf life for Vatharoga Chooranam. Extractive values like Water-soluble extract (9.66%) and alcohol-soluble extract (10.13%) provide an initial understanding of the proportions of polar and non-polar compounds present in the raw drug (Table 4). These values can serve as a reference for future studies aiming to isolate and identify the active constituents of Vatharoga Chooranam. Chromatographic analysis TLC and HPTLC analyses were performed using visible light Short-wave UV light 254nm and light long-wave UV light 365 nm. Rf value of the peaks ranges from 0.01 to 0.68 (Table 5). This study serves as a preliminary investigation into the physicochemical properties of Vatharoga Chooranam, a Siddha Polyherbal formulation. While the findings provide a foundation for further research. Building on the insights gained from this study, future research can explore more about the polyherbal formulation. This study lays the groundwork for a more comprehensive understanding of Vatharoga Chooranam and its potential as a therapeutic agent.

CONCLUSION

Physicochemical analysis of Vatharoga Chooranam indicates that it falls within acceptable parameters for further investigation. The profile suggests potential safety and efficacy, which warrants further exploration through preclinical and randomized clinical trials. These trials would definitively establish the drug's efficacy, pharmacological properties, and therapeutic effects, potentially positioning Vatharoga Chooranam as a complementary or alternative treatment option for Cervical Spondylosis, especially considering the potential side effects associated with Anti-inflammatory drugs.

REFERENCE:

[1] "Sarabendirar Vaithiya Muraigal Siroroga Sigitchai, Saraswathi Mahal Library ,Thanjavur Tamil University,Pg 119.

[2] K.S. Murugesa Mudhaliyar, Gunapadam- Mooligai Vaguppu, Indian Medicine and Homeopathy, Third edition 2018,Page no:310

[3] K.S. Murugesa Mudhaliyar, Gunapadam- Mooligai Vaguppu, Indian Medicine and Homeopathy, Third Edition 2018, Page no:372

[4] K.S. Murugesa Mudhaliyar, Gunapadam- Mooligai Vaguppu, Indian Medicine and Homeopathy, Third Edition 2018, Page no:331

[5] K.S. Murugesa Mudhaliyar, Gunapadam- Mooligai Vaguppu, Indian Medicine and Homeopathy, Third Edition 2018, Page no:628

[6] K.S. Murugesa Mudhaliyar, Gunapadam- Mooligai Vaguppu, Indian Medicine and Homeopathy, Third Edition 2018, Page no:33

[7]R.Thiyagarajan ,Gunapadam-Thathu,Jeeva Vaguppu, Indian Medicine and Homeopathy, Eighth Edition 2013, Page no:369

[8]Indian Pharmacopeia Volume I, Government of India, Ministry of Health and Family welfare, Indian Pharmacopoeia commission, 2014

[9]Pharmacopeial 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

[10]Don Jacob. (9 May 2012) Citing Websites. Tablet weight variation and uniformity of weight of single dose preparations - pharmacopeial requirements IP/BP/USP. Retrieved date. 21st December 2013

[11]Protocol for Testing of Ayurvedic Siddha and Unani medicines, Ghaziabad: Department of AYUSH, pharmacopeial Laboratory for Indian Medicines; 2008. P. 49-50.