



Research Article

www.ijrap.net

(ISSN Online:2229-3566, ISSN Print:2277-4343)



ANALYTICAL STUDY OF ARKA TAILA: AN AYURVEDIC FORMULATION

Meena^{1*}, Arun Kumar², Gunjan Sharma³

¹ PG scholar, Shalaky Tantra Department, Rishikul Campus, Haridwar, Uttarakhand, India

² Assistant professor, Shalaky Tantra Department, Rishikul Campus, Haridwar, Uttarakhand Ayurved University, Uttarakhand, India

³ Professor and HOD, Shalaky Tantra Department, Rishikul Campus, Haridwar, Uttarakhand, India

Received on: 22/3/24 Accepted on: 04/5/24

*Corresponding author

E-mail: meenasheokand734@gmail.com

DOI: 10.7897/2277-4343.15379

ABSTRACT

Karnasrava (Otomycosis) is one of the 28 Karnarogas described by Acharya Sushruta. Otomycosis is a fungal ear infection that affects the external auditory canal. It causes inflammation, tinnitus, intense itching, watery discharge, pain, and ear blockage, which is more seen in dusty, warm and humid areas. It seems to be a prevalent clinical condition found in the outpatient department of otorhinolaryngology worldwide. Otomycosis affects the skin of the external auditory canal, causing itching, which is seen mainly in skin diseases (Kustha roga). Sneha kalpana (medicated ghee and oils) in managing Kustha roga has been in vogue since the Samhita period. Arka Taila is an important formulation described in Gada Nigraha for managing skin diseases like Pama, Kachchu, and Vicharchika. Hence, the present study has been undertaken to develop the analytical profile of Arka Taila according to API and the drug testing protocol of PLIM. Materials and Methods: The Arka Taila was subjected to an organoleptic study, physicochemical evaluation, antimicrobial study and heavy metal analysis. Results: Arka Taila is safe for use as heavy metals were below the acceptable limit and free from pathogenic microbes. Conclusion: This paper presents the analytical study of Arka Taila, which was prepared using the general method of preparation of sneha kalpana.

Keywords: Karnasrava, Arka Taila, Sneha kalpana, and analytical profile

INTRODUCTION

The ear is one of the five human sense organs. Acharya Sushruta described 28 ear diseases in chapter 20th Karnaroga vigyaniya, which reflect the importance of the ear. Karnasrava is one of those 28 Karnaroga¹. Karnasrava is likely to be similar to because of the resemblance of its symptoms srevetu puyam² to discharge, Kaphavratavata lakshana like shoola and gauravani related to pain and aural fullness, and kandu is lakshana of Kapha prakopa which can be correlated with itching in otomycosis. Otomycosis is a fungal infection of the ear canal³.

Sneha kalpana is the process of getting oleaginous medicinal substances. Taila kalpana is a technique where taila is used as a base to get properties of the herbs in the media of Sarshapa taila. The taila acts not only as a base but also as a vehicle. The active constituents of the drugs are incorporated into the taila to make the preparation therapeutically more potent. Arka Taila consists of three drugs: Arka, Haridra and Sarshapa taila⁴. Taila kalpana is a pharmaceutical process that comes under the sneha kalpana⁵. In the present study, Arka Taila was prepared according to the general rule of sneha kalpana, i.e., (1:4:16 – Kalka dravya: Sneha dravya: Drava dravya)⁶.

Aims and Objectives

To analyse the physical, organoleptic character, heavy metal content, and microbiological study of the Arka Taila prepared using the classical method.

MATERIALS AND METHODS

Selection of the raw materials: Arka Taila Haridra (*Curcuma longa*) and Sarshapa taila (Mustard oil) were purchased from the local market. Arka Patra (*Calotropis Procera* leaves) for swarasa (fresh juice) was collected from the surroundings of the Rishikul Campus, Haridwar, Uttarakhand, India.

Pre-treatment of raw material: Fresh Arka leaves were washed under running water to remove the adhering dust from the leaves.

Method of preparation

Preparation of Kalka (paste)

For the preparation of kalka, Haridra was weighed 250 gm, correctly washed with distilled water, subjected to a coarse powder and ground with a grinding stone (sil-batta) by adding little water until the drug attained kalka form.

Preparation of Swarasa (Juice)

Fresh leaves of Arka were appropriately washed with distilled water and ground with an edge runner electrical grinder by constantly adding a small amount of water until the drug became in Kalka form. The paste was squeezed through a sterile cloth, and 4 litres of Arka patra swarasa was used.

Preparation of Arka Taila

In a stainless steel vessel, 1 litre of Sarshapa taila was taken and subjected to moderate heat. Then, 250 gm of Haridra kalka and 4 litres of Arka patra swarasa were added. The mixture was stirred continuously to avoid sticking contents to the bottom of the vessel. Heating was carried out till the sneha siddhi lakshanas

appeared viz., by taking the kalka and rolling it between the fingers, a varti was formed. It was put on the fire, and no crackling sound was produced. Then, the vessel was removed from the stove, and the contents were filtered through a double-layered clean muslin cloth.

After self-cooling, 800 ml of Arka Taila was obtained and stored in a clean, dry, air-tight glass container. It was observed that the oil develops the smell and colour of a particular vegetable and other ingredients used. The sample was collected at the khar paka stage of taila paka.



Figure 1: Contents of Arka Taila (Arka Patra, Haridra and Sarshapa Taila)



Figure 2: Preparation of Arka Taila

Methods of Evaluation of Arka Taila: Arka Taila were evaluated by employing parameters mentioned in Ayurvedic Pharmacopoeia of India and protocol of Ayurvedic drug testing of PLIM, Ghaziabad, UP, India ⁷.

Heavy metal analysis: Arka Taila sample tested for the presence of heavy metals such as cadmium (Cd), lead (Pb), mercury (Hg), and arsenic (As). All the metals were present in a safe range.

Microbiological study: Arka Taila was evaluated for the total bacterial and fungal counts. The plate count method carried out the total bacterial count mentioned in API, Part II, Vol-I, Appendices 2.4.2.

OBSERVATIONS AND RESULTS

The organoleptic characters of Arka Taila show a greenish-yellow colour, slightly aromatic in odour, unctuous in touch, and oily in appearance. Determinations of the microorganism of Arka Taila show that the total microbial count and pathogens in the culture are under the limit. Arka Taila also tested for heavy metals such as lead, arsenic, cadmium, and mercury and were found within the normal range. All the values found were within their normal limits.

The physiological and chemical characteristics of Arka Taila samples were analysed using quantitative analysis for the refractive index, specific gravity, acid value, saponification value, iodine value, peroxide value, and mineral oil. It was found that the formulation has all the values within the standard limits. As per standard techniques limits as described in the Ayurvedic

Pharmacopoeia of India (API), indicating the drug is safe for use in the Karnasrava (Otomycosis).

Table 1: Physical Characterisation Description

Parameters	Arka Taila
Appearance	Oily liquid
Colour	Greenish yellow
Odour	Slightly aromatic
Taste	Characteristic
Touch	Unctuous

Table 2: Physicochemical properties

Parameters	Arka Taila
Specific gravity (g) at 40 degrees C	0.917
Refractive index at 40 degrees C	1.473
Acid value	0.63
Peroxide	2.10
Saponification value	199.22
Iodine value	105.0
Mineral oil	Absent

Table 3: Heavy metals

Heavy metal analysis	Findings
Lead (Pb) ppm	0.64
Arsenic (As)	<0.50
Cadmium (Cd) ppm	<0.01
Mercury (Hg) ppm	<0.13

Table 4: Microbiological Analysis

Microbiology study	Findings
Total bacterial count (cfu/g)	<10
Yeast and mould count (cfu/g)	<10
<i>P. aeruginosa</i>	Absent
<i>S. aureus</i>	Absent
<i>E. coli</i>	Absent
<i>Salmonella sp.</i>	Absent

antioxidant⁸. So Arka Taila, because it possesses all these properties, can be useful in managing Karnasrava (otomycosis).

CONCLUSION

The physicochemical evaluation of Arka Taila illustrated the specific characteristics of this preparation. The microscopic features, physicochemical parameters, heavy metal testing and microbiological analysis, are essential for ensuring the drug's safety and quality. All the product readings came out to be within normal range.

REFERENCES

1. Sushruta Samhita of Maharshi Sushruta by Kaviraj Ambika Dutt Shastri part 2 (Uttarakhand)) Shloka (20/3), Reprint edition 2017, Chaukhamba Sanskrit Sansthan Varanasi, p. 111.
2. Sushruta Samhita of Maharshi Sushruta by Kaviraj Ambika Dutt Shastri part 2 (Uttarakhand)) Shloka (20/3), Reprint edition 2017, Chaukhamba Sanskrit Sansthan Varanasi, p. 117.
3. Diseases of Ear, Nose and Throat & Head by PL Dhingra & Shruti Dhingra, Diseases of External Ear (8), 5th Edition 2010, Elsevier, p 58.
4. Gada Nigraha part 2 edited by Shri Mat Vaidya Sodhala, Kushtha Adhikar Adhyaya (36/197 Chaukhamba Sanskrit Sansthan Varanasi, P 797.
5. Sharangdhara Samhita by Srikanth Murthy, 2nd edition, Chaukhamba Sansthan Varanasi. P. 348
6. Sharangdhara Samhita – A treatise on Ayurveda by Prof. K.R. Srikantha Murthy, Madhyama Khanda Chapter 9, Ver 1-2, Varanasi: Chaukhamba Orientalia, 2016; p 115
7. Anonymous, The Ayurvedic Pharmacopoeia of India. Government of India. Ministry of Health and Family Welfare. Department of Indian Systems of Medicine and Homoeopathy. Delhi. Part-1. Volume 9, 2016
8. Pooja Verma et al. Evaluation of Efficacy of Arka Taila in the Management of Otomycosis – A Phytochemical Analysis. World Wide Journal of Multidisciplinary Research and Development. 2022; 8(06): 97-98.

Cite this article as:

Meena, Arun Kumar and Gunjan Sharma. Analytical Study of Arka Taila: An Ayurvedic Formulation. Int. J. Res. Ayurveda Pharm. 2024;15(3):101-103
 DOI: <http://dx.doi.org/10.7897/2277-4343.15379>

Source of support: Nil, Conflict of interest: None Declared

DISCUSSION

The reference of Arka Taila (*Calotropis Procera* processed oil) prepared here was taken from the Gada Nigraha due to three glycosides: calotropin, uscharin, and calatoxin. Asclepin, trypsin, ethyl acetate, labenzyme and calotropengin Arka show anthelmintic, antifungal and anti-inflammatory properties. In Haridra, Rhizomes contain curcumin (DiferulomyImethane), 6-heptadiene-3, 5- dione, fat, vitamins A, B and C proteins show anti-inflammatory, antibacterial, antioxidant, antiallergic and antifungal properties. Sarshapa contains volatile oils and glycosides like glucocheirolin, lecithin, and myrocin, as well as minerals that show antileprosy, antifungal, antimicrobial, and

Disclaimer: IJRAP is solely owned by Moksha Publishing House - A non-profit publishing house, dedicated to publishing quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IJRAP cannot accept any responsibility or liability for the site content and articles published. The views expressed in articles by our contributing authors are not necessarily those of the IJRAP editor or editorial board members.