



Research Article

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ANALYTICAL STUDY OF CHANDRAPRABHA VARTI OINTMENT: AN AYURVEDIC FORMULATION

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ABSTRACT

The eyes are the most important of the five senses. If a person is endowed with all other sensory faculties, strength, beautiful appearance etc. but without eyesight, he will be as useless as an insect (kudya). Chandraprabha Varti is an Ayurvedic topical formulation mentioned in the Ayurvedic classic. According to Acharya Yogratnakar, this Varti eliminates Timira, Pistaka, Patala and Pushpakaroga. For better compliance with medicine and aseptic delivery of drugs, the Varti will be modified in the ointment. The present study has been undertaken to develop the physicochemical profile of the final product. Anjana was prepared in the form of ghan satva kalpana. Ajamutra was added in decoction in adequate amounts and then mixed with emulsified bee wax to attain the final product. Materials and Method: The prepared drug was evaluated for organoleptic study and physicochemical study, and the product was subjected to microbial contamination test for developing standards. Result: The result shows the organoleptic character and sterility. Conclusion: Chandraprabha Varti ointment was prepared by following the method prescribed in Yogratnakar. This paper presents the analytical study of the formulation.

Keywords: Chandraprabha Varti, Organoleptic study, Analytical study.

INTRODUCTION

Anjana has unique therapeutic efficacy over all kriyakalpas procedures indicated when dosas are fully manifested and are localised in the eye. ¹ Anjana is a procedure of applying medicine in the form of gutika (tablet rubbed in an appropriate solution), raskriya (ointment form), and churna (fine powder) to the inner side of the lower lid either by fingertip or by anjana shalaka.²

Acharya explores varieties of anjana for the management of Netrarogas. Chandraprabha Varti is mentioned in Yogratnakar, which contains Haridra, Nimbapatra, Pippali, Maricha, Vidanga, Musta, and Abhaya in equal amounts. This Varti is said to be formulated by Lord Rudra³. It is believed to have pharmacological actions over Timira, Pistaka, Patala roga and Pushpakaroga.

Almost all drugs have rasayana or chaksushya properties. According to Acharya Bhavmishra, Rajani and Abhaya have shothhara properties.⁴ Pippali stated as kaphanilaghi and rasayana, balya by Acharya Sushruta⁵.

Almost all drugs possess antioxidant activity. This paper presents the analytical study of formulation, which is essential for Ayurvedic researchers and practitioners to maintain the standard quality of formulation.

Aims and objectives

1. To analyse the physical or organoleptic character of the drug.
2. To find out the sterility and physicochemical tests of Chandraprabha Varti formulation prepared by classical methods.

MATERIALS AND METHODS

Collection of raw materials: The raw drugs for the study were procured from the Hans Pharmacy Premnagar Ashram, Haridwar Uttarakhand. The PG Department of Dravyaguna, Rishikul Campus, Haridwar, identified the ingredients, and the voucher (DG/RC/UAU-131:02/02/2023) of the specimen sample was kept in the department. The final product of Chandraprabha Varti ointment was prepared in the Hans Pharmacy Premnagar Ashram, Haridwar Uttarakhand.

The Chandraprabha Varti ointment was prepared by the classical method of ghana satva⁶. For ghana satva, all the herbal drugs, i.e., Haridra, Nimba patra, Pippali, Maricha, Vidanga, Musta, and Abhaya, were taken in equal amounts, and decoction was made in eight times of water till it remains ¼ of it. Ajamutra was added in decoction in an adequate amount. Then that ¼ part of the decoction was filtered and again boiled till it became thicker. After that, the ghana satva was dried in a tray drier at 35-40 °C temperature and then powdered. Powdered drug filtered with 120 no. sieve mesh and mixed well and emulsified with Bee wax in a ratio of 2:1, and packaging was done in sterile ointment tubes.

Table 1: Chandraprabha Varti and their proportions

Drug	Latin name/ Family	Rasa	Guna	Virya/ Vipaka	Part Used	Ratio
Rajani	<i>Curcuma longa</i> Zingiberaceae	Tikta Katu	Laghu Ruksha	Ushna/ Katu	Root	1
Nimba/Neem	<i>Azadirachta indica</i> Meliaceae	Tikta Kashaya	Laghu	Sheeta/ Katu	leaves	1
Pippali	<i>Piper longum</i> Piperaceae	Katu	Laghu Snigdha Tikshana	Katu, Anushna sheet/ Madhura	Seed	1
Marich	<i>Piper nigrum</i> Piperaceae	Katu	Laghu Tikshana	Ushna/ Katu	Seed	1
Vaya vidanga	<i>Embelia ribes</i> Myrsinaceae	Katu Kashaya	Laghu	Ushna/ Katu	Seed	1
Nagar Motha	<i>Cyperus rotundus</i> Cyperaceae	Tikta Katu Kashaya	Laghu Ruksha	Sheeta/ Katu	Root	1
Haritaki	<i>Terminalia chebula</i> Combretaceae	Pancharasa Alavana	Laghu Ruksha	Ushna	Fruit	1



Curcuma longa



Azadirachta indica



Piper longum



Piper nigrum



Embelia ribes



Cyperus rotundus



Terminalia chebula



Bee wax

Method of preparation of Chandraprabha Varti ointment



The procedure of preparing Chandraprabha Varti ointment

S. No.		Test Parameters	Results	Specifications	Method Reference
				Minimum	Maximum
01	Description	A dark brown coloured semi solid mass			Visual
02	Loss on drying (%w/w)	1.42			API
03	Total ash (%w/w)	2.13			API
04	Acid insoluble ash (%w/w)	0.40			API
05	Water soluble extractive (%w/w)	4.05			API
06	Alcohol soluble extractive (%w/w)	15.64			API
07	Heavy Metals				
	Lead (Pb) ppm	3.95		10.0	API
	Arsonic (As) ppm	<0.50		3.0	API
	Cadmium (Cd) ppm	0.14		0.3	API
	Mercury (Hg) ppm	<0.13		1.0	API
08	Microbiological Limit Test				
	Total bacterial count (cfu/g)	280		10 ⁶	API
	Total fungal count (cfu/g)	<10		10 ⁴	API
	E. coli	Absent		Should be absent / g	API
	S. aureus	Absent		Should be absent / g	API
	P. aeruginosa	Absent		Should be absent / g	API
	Salmonella sp.	Absent		Should be absent / g	API

Figure 1: Analytical Report from Multani Pharmaceuticals Ltd.

RESULTS AND DISCUSSION

Pharmacognostic analysis showed that the organoleptic characters of the sample were dark brown semisolid in appearance and characteristic odour and taste. The analytical study deals with both the physical and chemical properties of the drug prepared. Microbial analysis and heavy metal test also found in the normal range shows the aseptic nature of Chandraprabha Varti ointment. All values were found in their normal range as described in Ayurvedic Pharmacopoeia of India (API)⁷⁻⁸.

Analytical study: The prepared final product, i.e., Chandraprabha Varti ointment, was analysed using various analytical parameters.

Organoleptic study or Physical characterisation description: Organoleptic characteristics for various sensory characteristics like colour, taste, odour, etc., are carefully noted. (Table 2, Figure 1)

Table 2: Physical characterisation Description

Appearance	Semisolid mass
Colour	Dark brown
Odour	Characteristic
Taste	Characteristic

Table 4: Heavy metal test

Lead (Pb) ppm	3.96
Arsenic (As) ppm	<0.50
Cadmium (Cd) ppm	0.14
Mercury (Hg) ppm	<0.13

Table 3: Physiochemical analysis of Chandraprabha Varti ointment

Parameters	Chandraprabha Varti ointment
Loss on drying (%w/w)	1.42
Total Ash (%w/w)	2.13
Acid insoluble ash (%w/w)	0.40
Alcohol soluble extractive (%w/w)	16.64
Water soluble extractive (%w/w)	4.05

Table 5: Microbial analysis

Total bacterial count	280
Total fungal count	<10
<i>Escherichia coli</i>	Absent
<i>Staphylococcus aureus</i>	Absent
<i>Pseudomonas aeruginosa</i>	Absent
<i>Salmonella species</i>	Absent

Physiochemical Analysis

Physiochemical analysis was carried out, such as loss of drying at 105 °C. Loss on drying of the final product was in the normal range. (Table 3, Figure 1).

Along with this, the heavy metal test was carried out. The result of these tests was obtained within the normal range. (Table 4, Figure 1)

The plate count method carried out the total microbial count, which is mentioned in A.P.I, Part II, Vol-I, Appendices-2.4. (Table 5, Figure 1).

CONCLUSION

Pharmacognostic and physiochemical evaluation of Chandraprabha Varti ointment illustrated specific preparation characteristics. For the first time, the pharmaceutical and analytical profile of Chandraprabha Varti ointment was established. All parameters used for standardisation and quality evaluation of Chandraprabha Varti ointment were within normal limits.

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