

ANALYTICAL STUDY OF CHANDRAPRABHA VARTI (OINTMENT)

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Article Received on 17/07/2023

Article Revised on 07/08/2023

Article Accepted on 27/08/2023

ABSTRACT

Various medications have been described in our classical texts which contain different sources like plant, animals, minerals, metal and marine. A number of Herbomineral preparations are described by *Acharya*'s. All them are formulated in such a way that they become suitable for our body. This clearly states the usage of Herbomineral preparation in *Netra roga* also. *Chandraprabha Varti* is one such preparation which is mentioned in *Bhaisajya Ratnavali* and indicated in *arbuda, patala, kacha, timira, raktaraji, arma* etc. *Chandraprabha Varti* is formulated in ointment form because *Varti* has many pitfalls. The main problem with *Varti* is availability of its compatible form, its bioavailability, mode of administration, its preservation etc. To overcome all these hurdles, *Chandraprabha Varti* was formulated in ointment form.

INTRODUCTION

In *Ayurveda*, *Aushadha* is one among *Trisutra Ayurved*.^[1] *Aushadha* can be prepared from many sources like plants, animals, marine, metals and minerals etc. The herbomineral preparations are the preparation which contain plants as well as animals sources. *Chandraprabha varti* is one such herbomineral preparation which is in *Varti* form and indicated in ophthalmic conditions like *arbuda, patala, kacha, timira, raktaraji, arma* etc.^[2] *Varti kalpana* is described under types of *anjana* by *Acharya Bhavmishra*. He classified *anjana* in three types i.e. *Rasakriya, Varti, Churnanjana*. The main pitfall of *varti kalpana* is availability of its compatible form. Secondly, the *varti* should be rubbed with *kshodra, ksheer* or *jala* prior application. Other problems are its sterilization issue and preservation or storage because *varti* should be stored in specific containers like *lauha, tamra* etc for particular effect. To overcome all these, *varti* was modulated in ointment form for the ease of application, more bioavailability, microbial free so could be stored for longer duration. The

present article aimed to determine the physicochemical properties of *Chandraprabha varti* (Ointment).

AIMS AND OBJECTIVES

1. To analyze the physical or the organoleptic character of drug.
2. To find out the pH, heavy metal content and microbiological study of *Chandraprabha varti* (Ointment).

MATERIAL AND METHODS

Collection of drug- The raw drugs were collected from *Hans Pharmacy Premnagar Ashram, Haridwar, Uttarakhand*.

Identification and Authentication

The raw drugs were identified and authenticated by *Dravyaguna* department of *Gurukul campus Haridwar Uttarakhand Ayurved University* and the specimen sample was kept in the department. The final drug was prepared in *Hans Pharmacy Premnagar Ashram, Haridwar, Uttarakhand*.

Ingredients of chandraprabha varti (Ointment)**Table 1: Ingredients and composition of Chandraprabha Varti (Ointment).**

Dravya	Latin name	Family	Dosha shamakta	Karma
<i>Rasanjana</i>	<i>Berberis aristata</i>	Berberidacea	<i>Kapha pitta</i>	<i>Chedana Vranaropana, Chakshushaya</i>
<i>Shweta maricha</i>	<i>Piper nigrum</i>	Piperaceae	<i>Vata kapha hara</i>	<i>Deepan, vedanahar Lekhana</i>
<i>Pippali</i>	<i>Piper longum</i>	Piperaceae	<i>Vata kapha shamak</i>	<i>Shoolhara</i>

				<i>Yogavaahi Shleshmahara</i>
<i>Mulethi</i>	<i>Glycyrrhiza glabra</i>	<i>Leguminosae</i>	<i>Vata pitta shamaka</i>	<i>Chedan</i>
<i>Bibhitaka</i>	<i>Terminalia bellirica</i>	<i>Combretaceae</i>	<i>Tridosha hara</i>	<i>Shothhar Vedanstapak, Chedan</i>
<i>Shankhnabhi</i>	<i>Conch shell</i>	-	<i>Tridosha hara</i>	<i>Netraroghar Netrapuspahara</i>
<i>Manah shila</i>	<i>Realagar</i>	-	<i>Kapha shamaka</i>	<i>Lekhana Kaphanasaka</i>
<i>Aja dughda</i>		--	<i>Sarva vyadhi hara</i>	



Figure 1: Piper longum



Figure 2: Piper nigrum



Figure 3: Rasanjana



Figure 4: Glycyrrhiza glabra



Figure 5: Terminalia bellirica



Figure 6: Mnahashila



Figure 7: Shankh nabhi



Figure 8: Aja dughda

Method of preparation^[3]

1. The *Chandraprabha Varti*(Ointment) was prepared by the classical method of *Ghana satva*.
2. For *Ghana satva*, all the herbal drugs i.e *Rasanjana*, *Shweta marich*, *pippali*, *Mulethi*, *bibhitaka*, *shankha nabhi*, *manahshila* were taken in equal amount in dry form.(1kg each).
3. It was kept in 8 times of water (56 litre) for overnight.
4. Then the decoction was prepared till it reduced to 1/4th (14 litre) of total quantity.
5. The part of decoction was filtered and subjected to boil again till it became thicker.
6. After obtaining the *Ghana satva* it was kept into tray drier at 35-40^o C until completely dry and then was powdered.
7. *Ajadughda* was added in adequate amount.
8. Obtained powdered was sieved through mesh no.120 and then emulsified bee wax *sikhtha* was used as the base ingredient.
9. Drug to base ratio was kept as 3:2 for obtaining desired semi-solid consistency.
10. Final product was then packed in sterile ointment tubes of 5ml each under complete aseptic conditions.

Pharmacodynamics of chandraprabha varti (Ointment)**Table 2: Pharmacodynamics of Chandraprabha Varti (Ointment).**^[4-5]

Dravya	Rasa	Guna	Virya	Vipaka	Part used	Ratio
Rasanjana	Tiktakashaya	Laghu snigdha Mridu	Ushna	Katu	Ghana satva	1 Part
Shweta maricha	Katu	Laghu,tikshana	Ushna	Katu	Phala	1 Part
Pippali	Katu	Laghu,snigdha ,tikshana	Anushna sheeta	Katu	Phala	1 Part
Mulethi	Madhur	Guru,snigdha	Sheeta	Madhur	Moola	1 Part
Bibhitaka	Kashaya	Ruksha ,laghu	Ushna	Madhur	Phala	1 Part
Shankhnabhi	Kasay katu kshariya	Laghu sheeth	Sheeta	Madhur	Nabhi	1 Part
Manah shila	Tikta ,katu	Snigdha	Ushna	-	-	1 Part
Aja dughda	Madhur	Snigdha	Sheeta	katu	-	1 Part

Organoleptic properties of chandraprabha varti (Ointment)

Organoleptic characters for various sensory characters like appearance, colour and odour etc were carefully noted down.

Table 3: Organoleptic properties of Chandraprabha Varti (Ointment).

Organoleptic properties	Results
Appearance	A brown coloured semisolid mass
Roopa(colour)	Brown
Gandha(smell)	Characteristic
Consistency	Semi-solid

Physicochemical analysis of chandraprabha varti (Ointment)

Sample was subjected for physicochemical analysis such as loss on drying at 105-degree Celcius, total ash, acid insoluble ash, alcohol soluble extractive, water soluble

extractive and pH was analysed and found to be within normal range. The ointment was evaluated by employing parameters mentioned in *Ayurvedic Pharmacopoeia of India* and Protocol of *Ayurvedic drug testing of PLIM, Gaziabad, UP, India.*^[6]

Table 4: Physicochemical parameters of Chandraprabha varti (Ointment).

Parameters	Result
Loss on drying at 105 ^o C	1.68%
Total ash	1.52%
Acid-insoluble ash	0.25%
Alcohol-soluble extractive	5.86%
Water soluble extractive	12.21%
pH	4.15

Microbiological limit test

The ointment was evaluated for total bacterial and fungal count .total bacterial count was carried out by plate count

method, which is mentioned in A.P.I, Part II,Vol-1, Appendices2.4

Table 5: Microbiological limit test of *Chandraprabha varti* (Ointment).

Microorganism	Result
Total viable aerobic count	200 cfu/g
Total fungal count	<10 cfu/g
E.Coli	Absent
Salmonella	Absent
Staphylococcus aureus	Absent
Pseudomonas aeruginosa	Absent

Aflatoxin**Table 6: Aflatoxins in *Chandraprabha varti* (Ointment).**

(B1, G1)	Nil
(B2, G2)	Nil

Heavy metals in *chandraprabha varti* (Ointment)

Spectrometry was carried out for the existence of heavy metals like Lead(Pb), Cadmium(Cd), Mercury(Hg) and

Arsenic(As). All the heavy metals in ointment are within normal range.

Table 7: Heavy metals in *Chandraprabha varti* (Ointment).

Total Heavy metal (mg/kg)	Result
Lead	4.6 ppm
Cadmium	<0.30
Arsenic	<10
Mercury	<1

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TEST REPORT

License No. UK.AY.DTL-05/2019 Report No.: AY/20220901004
 Sample Name: Chandraprabha Varti Ointment Report Date: 08.09.2022
 Generic Name: NS Batch No./Lot No.: NS Pack size: NS Mfg. Date: NS Exp. Date: NS Batch Size: NS Sample Qty: 100 gm
 Condition (if provided): NS Sample reference: NS Mfg. Lic. No.: NS

Sample Manufactured By: NS
 Sample Supplied By: NS
 Sample Submitted By: (Dr. Lokesh Kumar) PG Scholar, Uttarakhand Ayurved University,
 (Name & Address of Customer) Gurukul Campus, Haridwar (Uttarakhand)
 Sample Received on: 01.09.2022 Analysis Started on: 01.09.2022 Analysis Completed on: 08.09.2022
 Reference to protocol: IHS

Sr. No.	Test parameters	Result	Specification		Method Reference
			Minimum	Maximum	
1	Description	A Brown colour semi solid mass			Visual
2	Loss on drying at 105°C (%w/w)	1.68%			IHS
3	Total ash (%w/w)	1.52%			
4	Acid insoluble ash (%w/w)	0.25%			
5	Alcohol-soluble extractive (%w/w)	5.86%			
6	Water-soluble extractive (%w/w)	12.21%			
7	pH (1% aqueous solution)	4.15			
8	TLC	Complies			
9	Total Heavy Metals (mg/Kg)			To Comply	
i)	Lead (Pb)	4.6ppm		NMT 10	
ii)	Cadmium (Cd)	<0.30		NMT 0.30	
iii)	Arsenic (As)	<10		NMT 10	
iv)	Mercury (Hg)	<1		NMT 1	
10	Microbial Contamination				
i)	Total Viable aerobic count	200 cfu/g		NMT 100000 cfu/g	
ii)	Total fungal count	<10 cfu/g		NMT 1000 cfu/g	
11	Test for specific pathogens				
i)	E. Coli	Absent		Should be absent	
ii)	Salmonella	Absent		Should be absent	
iii)	Staphylococcus aureus	Absent		Should be absent	
iv)	Pseudomonas aeruginosa	Absent		Should be absent	
12	Aflatoxins				
i)	(B1, G1)	Nil		0.5 ppm	
ii)	(B2, G2)	Nil		0.1 ppm	

Remarks: In the opinion of the undersigned, the sample referenced to above is of standard Quality as defined in the act and the rule made thereunder for the reason given; with respect to above test only.
 Abbreviations : NS : Not Specified, IHS : Inhouse Specification

End of Report.....

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Figure 9: Analytical report.

RESULT AND DISCUSSION

The pharmacological analysis of the drug was prepared on the final form of drug i.e *Chandraprabha varti* (Ointment). The analytical study carried deals with both physical and chemical properties of the drug prepared. Although values found were in their normal limits. As the product prepared is to be used directly on eyes these were major factors that will ensure safety while applying the product.

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