



“Comprehensive Analysis Of Chandanadya Varti: An Ayurvedic Medicinal Formulation”

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Abstract

In *Ayurvedic* literature *Acharyas* have described various *Netra Kriyakalpas* procedures for *Netra Roga Chikitsa*. One such procedure is *Anjana*(Collyrium). *Anjana* is applied on lower palpebral conjunctiva or Cul-de-sac. The active components of *Anjana* can be delivered to the inner parts of the eye based on their hydrophilic or lipophilic properties. This delivery occurs primarily through the conjunctiva and cornea, utilizing paracellular and transcellular pathways, respectively. The absorption of *Anjana* is significantly influenced by factors such as pH, viscosity, toxicity, molecular size, and molecular weight of its active ingredients. *Chandanadya Varti* is the herbal *Ayurvedic* formulation mentioned in *Chakradatta*. It was prepared by classical method mentioned in *Chakradatta* & excipients were added as per the ayurvedic pharmacopeia of India. The prepared drug was evaluated through organoleptic analysis, physicochemical analysis, HPTLC, microbiological analysis, and pH value determination to establish its standards. This paper present the analytical study of the formulation.

Keywords-*Chandanadya Varti*, *Timira*, Age related physiological insufficiency of accommodation, *Netra Roga*, Presbyopia.

Introduction

Timira(Age related physiological insufficiency of accommodation) mentioned under *Drishtigata Roga*^[1] in *Ayurvedic* literature by all *Acharyas*. Age related physiological insufficiency of accommodation is popularly known as presbyopia. *Chandhanadya Varti* is an *Ayurvedic* medicated preparation which is mentioned for *Timira* in *Chakradatta*^[2]. The contents of *Chandhanadya Varti* *Haritaki*, *Vibhitak*, *Amalki*, *Palash*, *Pugphala*, *Chandana* are having Antioxidant action, *Netra prasadan*, *Chakshushya*, *Netrahitam*. The ointment is prepared from extraction(*Arka*) of raw drugs. The ointment have higher bioavailability & longer tissue contact time.

Table 1 compositions of *Chandanadya Varti*

Drug	Latin Name	Part Used	Ratio
<i>Haritaki</i> ³	<i>Terminalia chebula</i>	<i>Phala</i>	1
<i>Vibhitak</i> ⁴	<i>Terminalia bellirica</i>	<i>Phala</i>	1
<i>Amalki</i> ⁵	<i>Emblica officinalis</i>	<i>Phala</i>	1
<i>Palash</i> ⁶	<i>Butea monosperma</i>	Bheej	1
<i>Pugphala</i> ⁷	<i>Areca Catechu</i>	<i>Phala</i>	1
<i>Chandana</i> ⁸	<i>Santalum album</i>	<i>Twak</i>	1

Material and methods:

Collection of Raw Materials:

The raw drugs for the study were procured from the Herbal Automation Kankhal, Haridwar, Uttarakhand. The final product that is *Chandanadya Varti* was prepared in GMP certified Anamika Pharmacy, Sidkul, Haridwar, Uttarakhand. The ingredients were identified by PG Department of *Dravyaguna & Ras sashtra*, Rishikul Campus, Haridwar

Fig. Extraction (*Arka*) through a distillation process

Method of preparation of *Chandanadya Varti*

The preparation of *Chandanadya Varti* in ointment form was carried out as follows: All the raw drugs were taken in equal ratios. *Palash Bheej* and *Pugphala* were converted into fine powder. The extraction (*Arka*) of all the powders was performed through a distillation process. Appropriate excipients, such as soft paraffin, liquid paraffin, and white petroleum jelly, were filtered through a coarse filter placed in a heated funnel. A fine paste was formed by dry heating the liquid at 1600°C for 2 hours. The paste was then filled into sterile ointment tubes.

Analytical study

Prepared final product i.e. *Chandanadya Varti* was analysed by employing various analytical parameters.

Organoleptic study

Organoleptic characteristics like color, appearance of *Chandanadya Varti* were observed.

Physiochemical analysis

Table 2. organoleptic parameters of *Chandanadya Varti*

Parameter	Result
Colour	Cream coloured ointment
Odour	Characteristic
Peroxide Value	4.53
pH (1% Solution)	6.03
Thermal Stability	Stable

Table 3. Microbiological Analysis of *Chandanadya Varti*

Parameter	Result
Total Microbial Plate Count	203 cfu/g
Total Yeast & Module Count	Absent
S.aureus	Absent
Salmonella sp.	Absent
Escherichia coli	Absent
Pseudomonas aeruginosa	Absent

Table 4. Heavy metal analysis of *Chandanadya Varti*

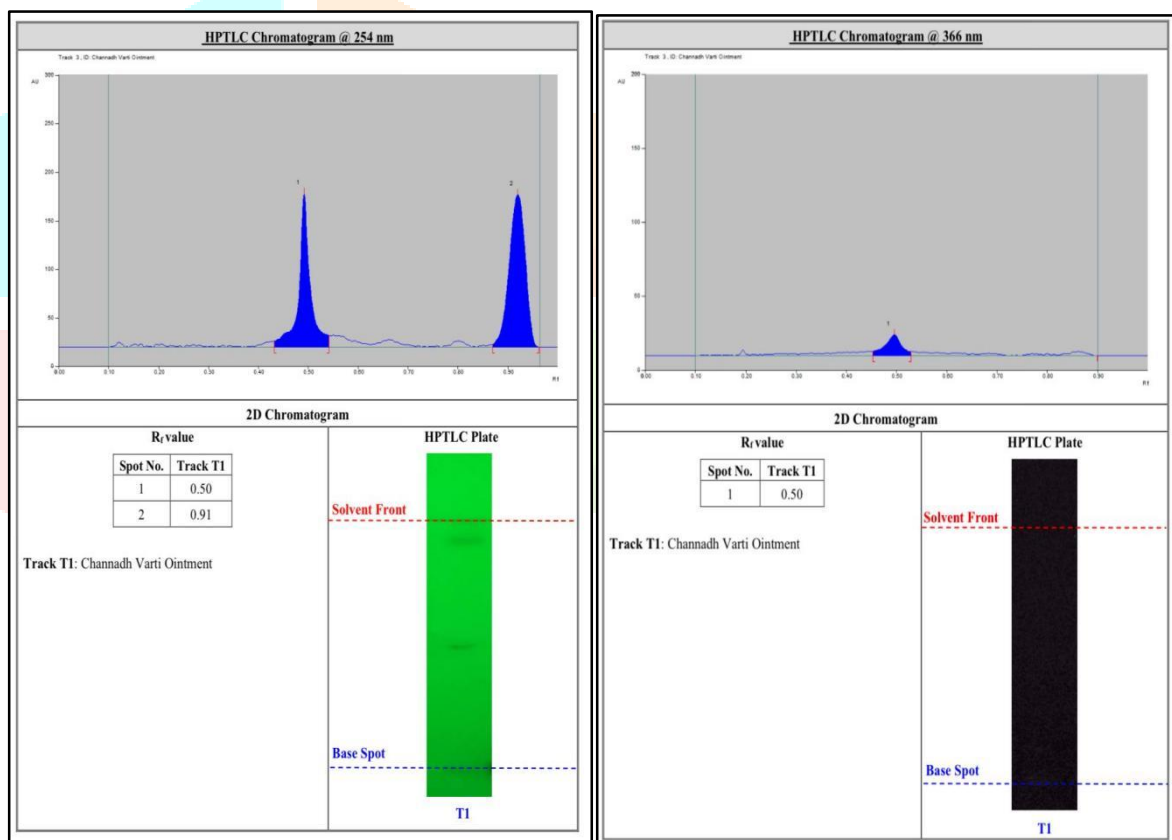
Parameter	Result
Lead	0.671 ppm
Cadmium	0.001 ppm
Arsenic	0.009 ppm
Mercury	0.040 ppm

Discussion

Standardizing *Chandanadya Varti* through rigorous testing ensures its quality and safety while also highlighting the integration of traditional *Ayurvedic* methods with modern scientific techniques. A comprehensive evaluation, including organoleptic, physicochemical, microbial, and heavy metal testing, confirms that *Chandanadya Varti* meets safety standards for *Ayurvedic* eye treatments. The pharmacognostical analysis indicated that the sample exhibited a dark brown color, along with a distinctive odor and taste. Physicochemical parameters are essential for evaluating the purity of the formulation. Microscopic and biological analysis demonstrated that the quality of *Chandanadya Varti* is maintained under standard conditions, with bacterial and fungal levels remaining within acceptable limits.

Conclusion

Chandanadya Varti is a herbal formulation contain the drug having properties such as *Netra prasadan*, *Chakshushya*, *Netrahitam*. The physiochemical evaluation of *Chandanadhya Varti* illustrated the specific characteristics of this preparation. Microscopic examination, physicochemical analysis, sterility testing, heavy metal assessment, and microbiological evaluation are crucial to ensure the safety and quality of the drug. All the readings of the product came out to be with in normal range.



Chandanadya Varti Ointment		Report Date	24.06.2024
		Sample ID	AD/24/187
Name of Scholar Dr. Neha Negi, Rishikul State Ayurvedic PG College, Haridwar			
CERTIFICATE OF ANALYSIS			
Sr. No.	Parameters	Result	Limit as per API
ORGANOLEPTIC ANALYSIS			
1	Description	Cream coloured ointment	NA
2	Odour	Characteristic	NA
PHYSICO-CHEMICAL ANALYSIS			
1	Rancidity	Not rancid	NA
2	Acid Value	0.00	NA
3	Peroxide Value	4.53	NA
4	pH (1 % Solution)	6.03	NA
5	Moisture by KF	0.74 %	NA
6	Thermal Stability	Stable	NA
INSTRUMENTAL ANALYSIS			
1	HPTLC Fingerprinting	Report attached	NA
HEAVY METAL ANALYSIS			
1	Lead	0.671 ppm	NMT 10 ppm
2	Cadmium	0.001 ppm	NMT 0.3 ppm
3	Arsenic	0.009 ppm	NMT 3 ppm
4	Mercury	0.040 ppm	NMT 1 ppm
MICROBIOLOGICAL ANALYSIS			
1	Total Microbial Plate Count (TPC)	203 cfu/g	10 ⁵ cfu/g
2	Total Yeast & Mould Count (TYMC)	Absent	10 ³ cfu/g
3	<i>Staphylococcus aureus</i>	Absent	Absent/g
4	<i>Salmonella sp.</i>	Absent	Absent/g
5	<i>Pseudomonas aeruginosa</i>	Absent	Absent/g
6	<i>Escherichia coli</i>	Absent	Absent/g
Key-Word: API – Ayurvedic Pharmacopoeia of India; % - Percentage w/w, ppm - Parts per millions, NA – Not applicable, ND - Not detected, cfu/g – Colony forming unit per gram.			

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