ijapc

E ISSN 2350 0204
www.ijapc.com

VOLUME 12 ISSUE 3

MAY 10, 2020

GREENTREE GROUP
PUBLISHERS

Int J Ayu Pharm Chem

RESEARCH ARTICLE

www.ijapc.com

e-ISSN 2350-0204

Analytical Study of *Haridradi Anjana* - An Ayurvedic Formulation

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ABSTRACT

Eyeshold special status among all the sense organs because good vision is crucial for social and intellectual development of human beings. Hence authentic classics prescribed several preventive and curative measures for the management of ophthalmic disorders. Among them, topical treatments are very unique, effective in the management of eye diseases and are called *Netra Kriyakalpa*. *Netra Kriyakalpa* has very fast action on the target tissues of eye. *Anjana* is a medicinal preparation which is applied on the lower palpebral conjunctiva. Its active principles may be transferred to the interior of the eye according to their hydrophilic and lipophilic qualities mainly through the conjunctiva and cornea by paracellular and transcellular pathways. *Haridradi Anjana* is Ayurvedic topical formulation mentioned in *Yog Ratnakar*[1]. The formulation is helpful in curing redness, burning sensation, watering, itching, photophobia, ropy discharge[2] in the eye. Keeping all these points in view the present study has been planned with an aim to analyses the physicochemical profile of *Haridradi Anjana* in ointment form.

KEYWORDS

Haridradi Anjana, *Hydrophilic*, *Lipophilic*, *Netra Kriyakalpa*, *Physicochemical Profile*, *Ointment*

Greentree Group Publishers

Received 31/03/20 Accepted 02/05/2020 Published 10/05/2020

INTRODUCTION

Anjana is one of the procedures among the *Kriya Kalpa*[3] (therapeutic procedures) mentioned by our *Acharyas*. It was extensively and frequently used in ancient times by *Acharyas* for the treatment of *Netra Rogas* and also it has been advocated in *Dinacharya* (*Swasthavritta)*[4] to keep eyes healthy and free from diseases. According to its form *Anjana* is of 3 types i.e. *Gutika* (pills), *Rasakriya* (semisolid), and *Churna* (powder). Acharya *Susruta* and *Vagbhata* mentioned that the strength of *Anjana* increases in preceding order as *Gutika*, *Rasakriya and Churna*. However, *Acharya Bhavamishra* mentioned that order somewhat different as *Rasakriya*, *Varti* and *Churna*[5].*Anjana* can be used according to the severity of the disease. G*utika*, *Rasakriya* and *Churna* forms can be used for the most severe, moderately severe and mild disorders of eyes respectively[6]. As per the action it is again of three types namely *Lekhana* (scraping), *Ropana* (healing) and *Prasadhana* (purifying)[7]. *Haridradi anjana* contains *Haridra, Madhuka, Haritaki, Devdaru* and *Aja kshira. Haridra* is *kapha-vatshamak, krimighna, vishaghna*[8]. *Madhuka* is *vata-pittashamak, chakshushya*[9]. *Haritki* is *tridoshahara, chakshushya*[10]. *Devdaru* is *kapha-vatshamak*, anti- inflammatory[11]. *Aja kshira* is *rakta-pittashamak and* anti-allergic[12]**.**

AIMS AND OBJECTIVES

1. To analyze the organoleptic characteristics of *Haridradi Anjana*.
2. To evaluate the physico-chemical properties of *Haridradi Anjana* (in ointment form).

MATERIALS AND METHODS

Collection of raw materials

The raw drugs for the study were procured from the Hans Pharmacy Sidcul, Haridwar Uttarakhand. Figure 1-8. The final product i.e *Haridradi Anjana* was prepared in the Hans Pharmacy Sidcul, Haridwar Uttrakhand.

Table 1 Content of *Haridradi Anjana*

Sr. No.	Drug	Latin Name	Family	Part used	Ratio
1.	*Haridra*	*Curcuma longa*	Zingiberaceae	Rhizome	1
2.	*Madhuka*	*Glycyrrhiza glabra*	Leguminosae	Stem	1
3.	*Pathya*	*Terminalia chebula*	Combretaceae	Fruit	1
4.	*Devdaru*	*Cedrus deodara*	Pinaceae	Stem	1
5.	*Ajakshira*			Milk	As required

Figure 1 Haridra

Figure 2 Madhuka

Figure 3 Devdaru

Figure 4 Pathya

Figure 5 Goghrita

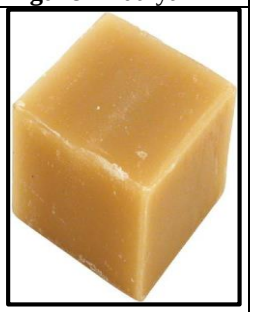

Figure 6 Beewax

Figure7 Aja kshira

Figure 8 Final product (*Haridradi Anjana*)

Method of preparation of *Haridradi Anjana*- *Haridradi Anjana* was prepared by classical method of *Ghana Satva*[13]. For preparing *Ghana Satva* all the herbal drugs i.e. *Haridra*, *Madhuka*, *Haritaki*, *Devdarua* (Table 1) were taken in equal amounts (i.e. 1½ kg each) and a decoction was made in eight times of water till it remained ¼ of it, then that 1/4th part of decoction was filtered and boiled again till it became thicker[14]. After that *Ajakshira* (1 litre) was added and mixed well in *Ghanasatva*. After that all that *Ghanasatva* was dried into tray drier at temperature 50 ^{0}C and then powdered. At the end pure *Goghrita* and beewax were taken as base ingredient. Firstly, *Goghrita* and beewax were taken in a glass container and waited for melting on 30 ^{O}C temperatures. After that all contents in container were mixed very well with the help of spatula. Then whole mixture and eye ointment tubes were passed through UV rays in UV rays chamber and filled in 5gm eye ointment containers.

Analytical study

Prepared final product i.e. *Haridradi Anjana* was analyzed by employing various analytical parameters.

Organoleptic study

Organoleptic characteristics for various sensory characters like appearance, colour, taste, odour etc were carefully noted down (Table 2).

Table 2 Organoleptic parameters of *Haridradi Anjana*

Sr. No.	Parameters	*Haridradi Anjana*

1.	Appearance	Semi solid
2.	Colour	Brown
3.	Odour	Characteristic
4.	Touch	Hard

Physico-chemical analysis

Physico-chemical analysis such as loss on drying at 105 ^{0}C was carried out. Loss on drying was normal range in final product (table 3). Along these, Microbial limit test and Heavy metal test were carried out. Results of these tests were obtained within the normal range (table 4-5).

Table 3 Physico-chemical analysis of *Haridradi Anjana*

Sr. No.	Parameters	*Haridradi Anjana*
1.	Loss on drying	10.04

Table 4 Microbial Limit Test

Sr. No.	Microbes	Count
1.	Total Bacterial Count (cfu/g)	<10
2.	Total fungal Count (cfu/g)	<10
3.	E.coli	Absent
4.	Salmonella sp.	Absent
5.	P. aeruginosa	Absent
	S. aureus	Absent

Table 5 Heavy Metals Test

Sr. No.	Heavy Metals	ppm
1.	Lead (Pb) ppm	4.2
2.	Arsenic (As) ppm	0.85
3.	Cadmium (Cd) ppm	0.15
4.	Mercury (Hg) ppm	0.32

pH value:

pH was determined by using Digital pH meter. One gram of ointment was dissolved in 100ml of distilled water and stored for 2hrs and the measurement of pH was 5.73 which is weakly acidic.

Sterility test

Sterility test was done by the method mentioned under IP 2007, vol-2, which shows that the drug tested, was sterile.

RESULTS AND DISCUSSION

Pharmacognostical Analysis/Organoleptic evaluation was performed in the finished product. The obtained value of loss on drying and pH value were found within normal limit in *Haridradi Anjana*, which indicates the good quality of product. Microbial limit test results and Heavy metals were also found in normal range.

CONCLUSION

Pharmacognostical and physico-chemical evaluation of *Haridradi Anjana* illustrated the specific characters of this preparation.On the basis of microscopic features, the physio-chemical profile and Microbials limit test are essential parameters for the quality of formulation, all parameters in this preparation were found within normal limits, on that basis, the present study on *Haridradi Anjana* may be used for standardization and quality evaluation of this preparation.

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