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ANALYTICAL STUDY OF *NAGARADI ASHCHYOTANA*: AYURVEDIC FORMULATION

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ABSTRACT
Nagaradi Ashchyotana is prepared from herbal drugs as mentioned in *Astanga Sangraha*, *Ayurvedic* classical text. The contents of *Nagaradi Ashchyotana* are *chakshushya* i.e good for eyes and *kaphashamak*. Hence they are useful in ocular disease conditions like watering, itching, swelling of lids and stickiness of eyes. Keeping all these points the present study has been undertaken with the aim to modify *Nagaradi Ashchyotana* into eyedrop form and to develop the physiochemical profile of it. The eye drop was prepared by using rosewater as base which is mixed with powdered *Ghana satva* and then filtered.

KEYWORDS: Nagaradi Ashchyotana, Kaphashamaka, Chakshushya.

INTRODUCTION
Ashchyotana is regarded as the *Aadya upkarma* in all eye disease by *Acharya Vagabhatt.*[1] *Nagaradi Aschyotana* contains *Nagar*, *Haritaki*, *Vibhitaki*, *Amalaki*, *Nimba*, *Vasa*, *Lodhra* and it has its pharmacological action on *Guruta*,(heaviness of eyes),*Akshisopha* (swelling of lids), *Kandu*(itching in eyes), *Updeha* (stickiness of eyes) and other lakshana of eye disease related to *Kaphaja Dosha.*[2] Out of the above mentioned ingredient of *Nagaradi Aschyotana Vibhitaki* and *Amalaki*, are described as *chakshushya* drugs in *sushruta samhita sutra sthan.*[3] *Nimba* and *Lodhra* are described as *netrayam* and *chakshushya respectively in bhavprakash nighantu.*[4] *Chakshushya* means that these drugs gives strength to the eyes and increase the eyesight i.e good for eyes. As described in *Bhavprakash Nighantu*. *Haritaki* is *Netrarujapaharini* i.e it relieves pain in eyes.[5] *Haritaki* is also described as *Lekhni*, *Chakshurhita* and *Indriya Prasadini* in *Dhanvantari Nighantu.*[6] Keeping all the effects in mind this drug was prepared and this paper presents the analytical study of formulation which may serve as supporting literature for future formulation and to maintain standard quality of formulation.

MATERIALS AND METHODS
Aims and objective
1. To analyze the physical or organoleptic character of drug.
2. To find out the sterility test and TLC profile of *Nagaradi Ashchyotana* prepared by classical and modified methods.

Collection of raw materials
The raw drugs for the study (shown in figure 1-7)were procured from Hansa Pharmacy Sidikul, Haridwar Uttarakhand. The final product i.e *Nagaradi Ashchyotana* was prepared in the Hansa Pharmacy Sidikul, Haridwar Utterakhand.

Method of preparation of *Nagaradi Ashchyotana*
The *Nagaradi Ashchyotana* was prepared by classical method of *Ghana satva*. For the preparation of *Ghana satva* all the herbal drugs i.e *Nagar*, *Haritaki*, *Vibhitaki*, *Amlaki*, *Vasa*, *Nimba* and *Lodhra* were taken in equal amount i.e 200 gm each in dry form but *Nimbapatra* was taken in fresh form as mentioned in *Sharangdhar Samhita*. After that decoction was made in eight times of water till it remained ¼ of total quantity. Then this part of decoction was filtered and allowed to sediment for 12 hours. The sedimented portion was left and the clear portion was again boiled till it become thicker like *leha kalpna* as shown in fig-8. After that all that *Ghana satva* was dried into tray drier at temperature 35-40 degree Celcious and then powdered.

Then 10 gm of the dry powder of Ghana satva was dipped in 100 ml of rosewater for 12 hours and then mixed properly. And diluted portion of this was again allowed to settled down for 12 hours and then filtered. This filtered portion was filled into eyedrop bottles.

Table. 1.

Drug	Latin Name	Family	PartUsed	Ratio
Nagar	*Zingiber officinale*	Zingebraceae	Rhizome	200gm
Haritaki	*Terminalia chebula*	Combretaceae	Dry fruit	200gm
Vibhitaki	*Terminalia bellirica*	Combretaceae	Dry fruit	200gm
Amalaki	*Emblica officinalis*	Euphorbiaceae	Dry fruit	200gm
Nimba	*Azadirachta indica*	Meliaceae	Leaves	200gm
Vasa	*Adathoda vessica*	Acanthaceae	Panchang	200gm
Lodhra	*Symplocos recemosa*	Symplocaceae	Root	200gm

Analytical study: Prepared final product i.e *Nagaradi Ashchyotana* was analyzed by employing various analytical parameters.

Physical characterization description or organoleptic study: Organoleptic characteristics for various sensory character like appearance, color, odour etc. was carefully noted down.

Table. 2.

Physical characterization description	
Appearance	Liquid
Colour	Dark brown
Odour	Characteristic

Ph value

Ph was determined by using digital ph meter. The measurement of ph was 5.3 which is weakly acidic. *Nagaradi Ashchyotana* was further subjected to thin layer chromatography (TLC)study.

Sterility test

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

TLC Profile

Instrument used for testing TLC Profile was silica plate. The stationary phase used was silica gel G G60F254 and mobile phase was tolune, ethyl acetate, formic acid (6:3:1).The plate was visualized under iodine vapours. RF values was recorded 0.23,0.45,0.67.

RESULT AND DISCUSSION

Analytical study deals with the analysis of the values of some physical constants and chemical values of the prepared formulation.Pharmacological analysis organoleptic evaluation was performed at final product i.e *Nagaradi Ashchyotana* (eyedrop)(obsevations of organoleptic analysis are tabulated in figure1).

Thin layer chromatography study (TLC) was carried out under 254 and 366 nm UV to establish finger printing profile.it showed rfv values 0.23, 0.45and 0.67were recorded which may be responsible for expression of its pharmacological and clinical actions.

Figure. 1: Azadiracta indica.

Figure. 2: Terminalia chebula.

Figure. 3: Adathoda vessica.

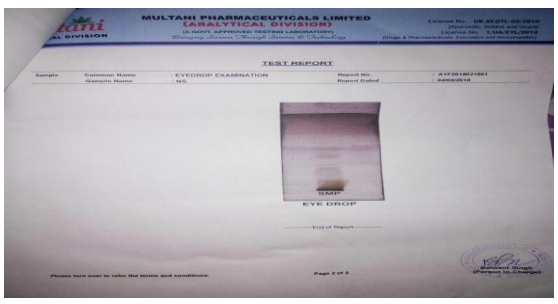
Figure. 4: Emblica officinalis.

Figure. 5: Symplocos racemosus.

Figure. 6: Terminalia chebula.

Figure. 7: Zinziber officinalis.

Figure. 8: Ghana Satva.



CONCLUSION

Pharmacognostical evaluation of *Nagaradi Ashchyotana* illustrated the specific character of the eye drop preparation. In present analytical study, obtained results are found within normal prescribed limits as described in ayurvedic pharmacopoeia of india. For the first time pharmaceutical and analytical profile of *Nagaradi Ashchyotana* was established. On the basis of observations and analytical study, this study may be used as reference standard in further quality control researches. The results of the study may be used as trail for the further development of Ayurveda formulation.

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