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EVALUATION OF EFFICACY OF NATURAL ASTRINGENT – A PILOT STUDY

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ABSTRACT

In today's market we found a vast range of cosmetic products, Astringent is also one of them. Basically astringent means a chemical which has effect to shrinks or constricts, in language of medicine, it causes contraction of mucous membrane and exposed tissues. So astringents are very popular to treat acne those who have oily skin, in order to minimize skin pores, reduces inflammation and wrinkles and also gives cooling and calming effect on skin.¹ As per *Ayurveda* texts astringent is referred for *kashaya rasa*, which is not only a type

of taste but it also an action in itself like *sthambhana*, *sandhaankara*, *ropan*² etc. which shows the same benefits on skin. This study is aimed to analyze and show the benefits and hazards between natural and artificial astringent using scientific evidences and classical *Ayurveda* references as well as trial on 30 healthy volunteers for 10 days.

KEYWORDS- Astringent, *Kashaya Ras*, *Sthambhan*, *Ropan*, Acne, Keratinocytes

INTRODUCTION

Use of astringents in daily skin care routine is becoming trends now; there are mainly two types of astringents available in market first is liquid-based formulas, usually containing isopropyl (rubbing alcohol) and second is natural astringents with alcohol from botanicals.³ Some studies clearly shows that use of isopropanol and n-propanol caused significant subcutaneous and keratinocyte perturbation with damage to skin condition and function⁴ so use of these types of products should be extremely cautious. Beside all these chemical we have treasure of herbs in *Ayurveda* and according to *samanya vishesh siddhanta*⁵ we can use *kashaya rasa dravya* for these benefits. Taking this *yukti* we made a natural astringent using *Lodhra*, *Arjuna*, *Sphatika* and *Nimbuka* and we found significant benefits in healthy volunteers.

Aims and objectives

1. To evaluate the efficacy of natural astringent.
2. To compile the scientific data and *Ayurveda* properties of *kashaya rasa* that interrelated to cosmetic astringents.
3. To analyze the evidences to find the capabilities of using natural astringent as an alternative for chemical astringents.

Methodology

All research data was collected to authentic research articles and online sources. Conceptual references of *Ayurveda* and their interpretation were collected from the authentic texts. Extracted data was analyzed to find the capabilities of using natural astringent as an alternative for chemical astringents. The new formulation was made in expert supervision and according to standards in Pharmecognostical and phytochemical lab of Department of Dravyaguna, NIA, Jaipur and packed in air tight spray bottles. 30 healthy volunteers were selected for using astringent. Study was for 10 days. The formulation was advised to spray locally at night time on face. Product is viable for more than 20 days if kept in refrigerator after every use.

Results and analysis

Results and analysis have been conducted in two ways. They are,

1. Evaluation of efficacy according to feedback and naked eye examination.
2. Compilation of scientific data of *kashaya rasa* in relation to astringent effect and cosmetic benefits.
3. Compilation of scientific data of lodhra, *arjuna*, *sphatika* and *nimbuka* in relation to natural astringent and cosmetic benefits.
4. Data collection regarding ingredients, their quantity, procedure and outcome of natural astringent.

To compile the scientific data and Ayurveda properties of *kashaya rasa* that interrelated to cosmetic astringents

As per text^{6,7} *kashaya rasa* possesses following qualities interrelated to cosmetic astringents -

- *Sandhaniya* - help coalesce discontinued tissue, and in healing and regenerative functions of the skin, repairing effects of aging thus protects from normal wear and tear.
- *Vranaropana* - enhance deeper healing abilities in the skin, like to heal wounds as well as acne scars.
- *Aakunchan* – have constricting effect so reduces pore size of skin.
- *Peedan* - have squeezing action on skin means it removes *ama* (clogged impurities in skin).
- *Shoshan* – it dries extra oil or sebum from skin that helps to cure acne.

Compilation of scientific data of lodhra, *arjuna*, *sphatika* and *nimbuka* in relation to natural astringent and cosmetic benefits.

Table 1 - Ayurveda properties of individual drugs^{8,9}

Drug	Ras	Veerya	Karma
Lodhra	Kashaya	Sheet	Raktasthambhana, vranaropan, kushthagna, shothhara
Arjuna	Kashaya	Sheet	Raktavikarhar, pittakaphanashak, Vishhar, udardaprashman
Nimbuka	Amla	Ushna	Krimihar
Sphatika	Kashaya	Ushna	Tridoshnashak, vranaghna, kushthagna

Lodhra (*Symplocos racemosa*) - : The term lodhra means in Sanskrit “that which makes the body firmer”. It’s found in previous studies that bark of *lodhra* shows significant anti acne activity with the help of disc diffusion and dilution methods¹⁰.

Arjuna (*Terminalia arjuna*) – *Arjuna* is very beneficial for skin due to its potent astringent, anti-inflammatory, antiulcer quality¹¹. It’s proved that *T. arjuna* bark extract appears as an innovative active ingredient that exerts versatile antiaging properties in vitro and in vivo¹².

Nimbuka (*Citrus lemon*)– As an ingredient of natural astringent its shown in previous studies that Lemon enables to dissolve oils and decrease skin and hair oil output, making acne therapy a useful option¹³. It gives natural fragrance to formulation and maintains the pH.

Sphatika (Alum [$KAl(SO_4)_2$]) –As we all know it is common drug administered as a local application to stop the bleeding in dental surgeries. Mainly alum possess astringent property and useful in the bleedings¹⁴.

Data collection regarding ingredients, their quantity, procedure and outcome of natural astringent

Table 2 - Ingredients of the formulation

S.no.	Drug	Quantity
1	Decoction (Lodhra, Arjuna)	40 ml
2	Alum (Fine Powder)	5 gm
3	Lemon	5 ml

Preparation of Natural astringent

Weight and mix all ingredients (Decoction, Alum and Lemon) in magnetic stirrer till it's become properly mixed. Filter with filter paper and packed in suitable container.

Efficacy evaluation according to feedback

In this pilot study we achieved positive feedback from 26 participants (04 participants were withdrawn) which are;

Table 3 – Feedback of natural astringent by participants

S.No.	Feedback	Percentage
1.	Gives calming, cooling and soothing sensation after application.	90 %
2.	Reduces extra oil from skin, seen by tissue paper application.	40 %
3.	Reduces pores size, seen by naked eyes.	70 %
4.	Skin becomes more smooth and firm than before.	65 %

CONCLUSION

The world of cosmetic is growing like weed in 21st century in which everyone is in a competition to earn more without any concern for consumers. But there is no replacement of nature and its herbs. This new formulation gives more benefits than any other alcohol based astringent without any adverse effects; it is pocket friendly as well as convenient in use so it's open for further research to make it available in market.

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