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Original Research Paper

Ayurveda

PHARMACEUTICAL ANALYSIS OF PREENANMODAK: AN AYURVED FORMULATION

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ABSTRACT Ayurveda is one of the most ancient medical science of the world . The purpose of *ayurveda* is to protect the health of the healthy and to alleviate disorders of the diseased. There are mainly eight branches of *ayurveda* out of which one among them deals with preparation of formulations. *ashwagandhadiavaleha* drug specially use in the treatment of karshya which mentioned in *sahasrayoga*. Since the therapeutic values and efficacy of the formulation depends on many factors, a physicochemical assay and hptlc analysis of the above formulation has been taken up for the present study.

KEYWORDS : karshy, underweight, malnutrition, hptlc.

INTRODUCTION:

Ayurveda is considered as the science of life. The ultimate aim of *ayurveda*is to guide every human being to maintain and promote health, and prevent ailments, which is the main hindrance to achieve dharma. Preenanmodak drug specially use in the treatment of karshya which mentioned in astanghhyridya ch.1 and used in the form of modak considering the palatability in children. The preparation contain five drug i.e*priyala, laja, yasthimadhu, madhu* and*sita*.

This formulation in present era needs the standardization. In this study *preenanmodak*is prepared as per the quotations explained in the classics. The preenanmodakis herbal preparation. *Gutika, modaka, pindi*and *vati*are synonymous terms used in classics for modak. The analytical study of modak is performed with following parameters: physico-chemical parameters i.e. Colour,oder, taste, ph, loss on drying, total ash, water soluble extractive and alcohol soluble extractive, are performed. Hptlc , total reducing sugar, total non-reducing sugar and total protein analysis are performed for identification of chemical constituents and respectively.

MATERIALS AND METHODS

Aim And Objectives

- Identification and authentication of raw drugs used for Preenanmodak.
- Preparation of *Preenanmodak*at GMP certified pharmacy as per classical explanation.
- Physicochemical, phytochemical of *Preenanmodak*.
- **Classical method of *preenanmodak*preparation :** The preparation of the drug was done as follows

Selection Of The Drug :

Preenanamodak has been selected for the present study. It is was described under the karshyachikitsain astanghhyridya ch.1 and used in the form of modak considering the palatability in children. The preparation contain five drug i.e*Priyala, Laja, Yasthimadhu, Sito* and *Madhu* are useful to relieve the symptoms of karshya in children. Acharya had mentioned it in ghrita form but here it is used in modak form because of consideration the palatability in children.

Collection And Authentification Of Raw Drugs –

- All the drug were purchased from the local market of vadodara city from the retailer , pharmacognostical authentication of all the raw drugs was done based on the morphological features, organoleptic characters in the parulayurved pharmacy the api standards were used for authentication.
- Raw drugs identification and authentication was done by the department of *dravyaguna*and preaparation of Modak was carried out in GMPcerified pharmacy of parul institute of ayurveda, parul university, vadodara.

Drug Review

The name of the drug, parts used and its quantity were mentioned in table

Ingredient :

Drug name	Botanical name	Part use	Ratio
Priyala	*Buchananialatifoli aroxb.*	Seeds	1 part
Laja	*Oryzasativalinn.*	Parched rice	1 part
Yashtimadhu	*Glycyrrhizaglabra*	Rhyzome	1 part
Madhu	-	Pushpasara	1 part
Sita	--	-	1 part

Drug Preparation -

- Make powder of priyalbija ,yasthimadhurhyzom $ laja. Take them in given quanity.
- Take sitopala in given quantity $ give it heat $ make one tarachasani(sugar syrup).
- Then add all the powder form drug $ mix and stir them on the heat.
- When the mixture is cool down, add honey for binding $ make modak of 7gm, 7.5gm, 12gm and 12.5gm.

- **Methods of physicochemical evaluation:** Preenanmodak was analyzed by using standard qualitative and quantitative parameters. All the procedures were conducted at gmpcertified . The physico- chemical parameters i.e. Colour,odour, taste, Ph, loss on drying, total ash, water soluble extractive, alcohol soluble extractive was analyzed in quality control & analytical study laboratory of parul institute of ayurveda, parul university and hptlc , total reducing sugar, total non-reducing sugar and total protein was analysed at vasu research centre, vadodara.

- **Chromatography**

HPTLC (High-performance thin layer chromatography) is a sophisticated form of TLC, which provides superior separation efficiency. The hptlc concept includes validated methods for qualitative and quantitative analysis, and fulfils all quality requirements for use in fully regulated environments. In this study hptlc, total reducing sugar, total non- reducing sugar and total protein has been performed for drug analysis. It is

an enhanced form of tlc. A number of enhancements can be made to the basic methods of tlc to automate the different steps, to increase the evolution achieved and to allow more accurate quantitative measurements.

Hptlc as shown in image

RESULTS AND DISCUSSION

- **Organoleptic evaluation:** organoleptic characteristics of powder drugs details are mentioned in the table 2

Samples	Preenanamodak
Colour	Green
Odour	Aromatic
Touch	Soft
Consistency	Semi solid
Taste	Sweet and bitter

2. Physico-chemical Parameters:

Sample	Preenanamodak
parameters	value
Loss of drying at 105c (%w/w)	14.4
Total ash value (%w/w)	1.2
Acid soluble ash (%w/w)	0
Water soluble extractive (%w/w)	24
Alcohol soluble extractive (%w/w)	0.56
Ph value	6
Rancidity	-ve

- Details of physico-chemicals values are mentioned in table 7
- Loss on drying: on drying the samples indicate that the samples were devoid of excess

Water content and there was no microbial overgrowth or insect infestation present. In this sample loss on drying is 14 %, it indicates the samples may have good shelf-life and may not decay on storage.

Total ash :

- It indicates of contamination, substitution, adulteration.
- The low total ash signifying low levels of inorganic matter and silica content.
- In this total ash 1.2% in this sample it is lightly more.
- Water soluble extract and alcohol soluble: water soluble extract and alcohol soluble extract are 24% and 0.56% respectively.
- The high solubility of the sample in water denotes that drug is best suited for extraction with water or water based preparations.
- **Ph**:
  - The ph was measured to note the acidity or alkalinity of the aqueous solution of the drug.
  - This helps in understanding the pharmacological basis of drug absorption and metabolism.
  - In this sample ph is 6% .

4. High-performance Thin Layer Chromatography Study:

Preparation of test solution : : weigh 5 g of sample in a beaker and to it add 10 ml of water. Sonicate for 30 minutes, filter and transfer the filtrate to a separating funnel. Partition the filtrate with 20 ml ethyl acetate and collect the ethyl acetate layer in a separate beaker. Repeat the procedure twice with 15 ml of ethyl acetate. Pool the ethyl acetate layers together and evaporate to dryness. Thereafter, reconstitute the sample with 2 ml of ethyl acetate and filter with 0.22 µm syringe filter. Use the test solution thus obtained for hptlc fingerprinting.

The Results Are Tabulated As Under. (image 3)

preparation of spray reagent [vanillin – sulphuric acid reagent]:

dissolve 50 mg vanillin in 2 ml methanol and 8 ml sulphuric acid (98 %). From this stock solution prepare 10 % solution in methanol . Image 3

Details of hptlc profile of all tracks at 254 nm. Under the 254 nm wavelength-track -1 of preenanmodak (5µl) - 9 spots were detected and starts with respect to retardation factor 0.13, 0.28, 0.52, o.62, 0.65, 0.70, 0.77, 0.82 and 0.88 (image 4)

Details of hptlc profile of all tracks at 366 nm. Under the 366 nm wavelength-track -1of preenamodak(5µl) - 13 spots were detected and starts with respect to retardation factor 0.13, 0.17, 0.34, 0.40, 0.44, 0.49, 0.52, 0.59,0.62,0.65,0.70,0.82 and 0.88 . (image 5)

Details of hptlc profile of all tracks at 540 nm. Under the 540 nm wavelength-track -1of preenanmodak(5µl) – 7 spots were detected and starts with respect to retardation factor 0.13, 0.34, 0.52, 0.65, 0.77, 0.82 and 0.88.

CONCLUSION

Any plant or formulation which is used medicinally requires detail study prior to its use because the therapeutic efficacy is depends on the quality of ingredients used for the medicine preparation. In this study, preenanmodak was prepared according to the classical textual standard operative procedure mentioned in classic. The raw drugs were indentified and authenticated before using for preparation. The prepared drug, preenanmodak was pharmacologically subjected for physicochemical analysis, hptlc. In future, this study will be helpful for standardization of preenanmodak and for the preparation of the monography of preenanmodak in the Ayurvedic formulary of India (AFI).

Conflict Of Interest: none

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Table 4 Physicochemical Analysis-

Sr. No	Parameters	Result
1	Total reducing sugar (%)	23.22
2	Total non-reducing sugar (%)	41.14
3	Total protein (%)	4.08
4	Hptlc fingerprinting	Reports attached

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