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Pharmaceutical and Analytical Study of Narach Churna - A Herbal Remedy for Udavarta

Pallavi R. Jagnade[1], Jayaprakash AN[2]
[1]Final year PG Scholar from Rasa Shastra Department Parul University, Limda, Vadodara
[2]Associate Professor Rasa Shastra Department, Parul University, Limda, Vadodara
For Correspondence: pallu7jagnade@gmail.com

ABSTRACT
The purpose of this investigation was to characterize the Ayurvedic preparation Narach Churnaa poly-herbal formulation made up of three ingredients, using pharmaceutical and Analytical parameters to confirm its identity, quality, and purity. The results of this test showed that it is possible to identify every element in Narach Churna. The parameters given in this research might be utilized to construct quality standards for Narach Churna so that batch-to-batch uniformity can be maintained. This document might also be used for quick formulation authentication using Fourier transform infrared spectroscopy and high-performance thin-layer chromatography. Narach Churna is a traditional formulation that is effective in Udavartadi Rog and is referenced in the Sharangadhara Samhita. As a result, the current work attempts to conduct a pharmacological investigation and examine the analytical elements of Narach Churna. The study's findings will aid in the standardization of the Narach Churna.
Keywords: *Narach Churna, Udavart, Trivrutta, Pharmaceutical, Analytical study, etc.*

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INTRODUCTION

Udavarta is a disease that develops as a result of poor lifestyle choices and affects numerous systems.It is an illness caused by *Adharniya Vega Dharana*, excessive Kashaya, *Katu*, and *Tikta* Rasa consumption, excessive *RukshaAhara* intake, and excessive *Upavasa* and *AtiVyavaya* intake [1]. This causes *Vataprakopa,* which disrupts the function of *Apana Vayu*, which is located in the *Pakvashaya*.

The practice of prescribing a set of standards or inherent features, consistent parameters, definite qualitative and quantitative values that convey an assurance of quality, efficacy, safety, and repeatability for herbal medicines is known as standardization [2]. If the drug testing has not been authenticated and described to assure repeatability in the manufacture of the product, it cannot be deemed scientifically genuine [3] Furthermore, various serious and deadly side effects, including direct toxic effects, allergic responses, contaminant effects, and combinations with herbal medications, have lately been recorded [4]. In light of the foregoing, standardization is a key step in establishing a consistent biological activity, a consistent chemical profile, or simply a quality assurance program for herbal medication manufacture and manufacturing [5].

*Narach Churna*is an Ayurvedic poly-herbal *Churna* (fine powder) formulation that is suggested by an Ayurvedic physician for hyperacidity (one type of pitta dosha in Ayurveda) and serves as an immunomodulator [6]. *Krishna* (Piper longum), *Trivrit* (Operculinaturpethum), and *Khanda* (Sugar Candy Powder) are three components blended in equal proportions. To our knowledge, there has never been a published report on the scientific analysis of *Narach Churna*, thus the current effort was done to define quality control parameters for *Narach Churna*to certify its identification, quality, and purity [7].

The ancient Indian medical system seeks to keep a person's metabolism in check. Man's insatiable desire to conquer diseases and maintain his health has prompted him to explore a variety of treatments, including *Bhaishajya Kalpana*, an *Ayurvedic* branch. *Bhaisajya Kalpana's* basic preparation is *panchvidh kashay Kalpana*. *Swarasa, kwatha, kalka, hima*, and *phanta* are the *Panchavidha Kashaya kalpana*. *Upaklpana* of *kalka kalpna* is *churna kalpna*. It is a fine powdered medicine or a pharmacological combination that is commonly recommended as a dose form. It is readily absorbed and metabolized, resulting in a rapid commencement of the activity [8]. For the treatment of *Udavart*, many formulations

are listed in classics, one of which is *Narach Churna*. *Udavart* is one of the most frequent ailments in today's world. *Narach Churna* is a basic herbal preparation with only three components. *Trivit* is the main component of this dish [9]. To evaluate the Pharmaceutical and Analytical study parameters of *Narach Churna.*

MATERIAL AND METHODS

LITERARY STUDY

During this research, I looked up the terms *'Udavarta'* in *Brihatrayee* and *Lagutrayee*, as well as available comments, internet resources, and journals.

MATERIAL

Pippali (*Piper longam*), *Trivrutta* (*Operculineturpethum*), and *Sharkar* are collected from GMP certified Parul Ayurved Pharmacy, Limda, Vadodara, Gujarat, India

METHOD

The pharmaceutical and analytical studies were used in this research. *Narach Churna* was produced for the pharmaceutical investigation, and observations were made. Various metrics for the evaluation of *Narach Churna* were carried out in the analytical analysis. The drugs required for the preparation were collected from GMP certified Parul Ayurveda Pharmacy, Vadodara, Gujarat, India.

PHARMACEUTICAL STUDY

The pharmaceutical preparation is basic and straightforward, using just readily available components. *Narach Churna* preparation was completed. Bhaishajya Ratnavali at the Rasshatra and Bhaishajya Kalpana Department, Parul Institute of Ayurveda, Vadodara, according to ancient references [10]. *Pippali* (*piper longam*), *Trivrutta* (*Operculine turpethum*), and *Sharkara* are all included in equal amounts in *Narach Churna*, an Ayurvedic composition. For *Churan* preparations, all components should be collected, completely cleaned, and dried drugs. Each ingredient should be pulverized separately before being combined. Clean and dry pestle and mortar should be used to reduce particle size and combine the item.

Table no 1- Rasa -Panchaka of the drug.

Sr no	Ingredient	Latin name	Parts Used
1	Trivrutta	*Operculine trpethum*	Root
2	Pippali	*Piper longum*	Fruit
3.	Khanda	Sugar Candy Powder	

Table no 2- Properties of individual drugs

Sr no.	Ingredients	Ras/ Test	Guna/Physical property	Vitrya/ Potency	Vipaka/ Metabolic property	Karma/Action
1	Trivrutta	Tikts,katu	Lagh, Rooksha, teekshna	ushna	katu	Balance pitta and kapha dosha
2	Pippali	Katu	Laghu, tikshna	Ushna	madhura	Balance Vata Kapha
3	Khanda					

ANALYTICAL STUDY

The Ayurvedic Pharmacopeia of India was used to conduct the pharmacological analysis of *Narach Churna*.

1. **Organoleptic character**: -Like appearance,odor, taste, and form
2. **Physico-chemical**- parameter like,total ash, water-soluble extractiveloss on drying, TLC.

Determination of Ash

Incinerate about 23g of ground drug in a silica dish at a temperature not exceeding 470 degrees Fahrenheit free of carbon, cool mass with hot water, collect residue on ashless filter paper, incinerate the residue and filter paper, add the filtrate, evaporate to dryness filter paper, incinerate the residue and filter paper, add the filtrate, evaporate to dryness and ignite at a temperature not exceeding 470 degrees Fahrenheit. Calculate the ash percentage using the air-dried medication as a reference [11].

Determination of alcohol-soluble extractive

In a closed flask, macerate 5gm of coarsely powdered air-dried medication with 100 ml of specified alcohol for twenty-four hours, stirring regularly during the first six hours and leaving to stand for eighteen hours. Filter quickly, taking care not to lose any solvent, to evaporate 5 ml of the filtrate to dryness in a tared flat bottomed shallow dish, and dry at 1050 to a consistent weight and consistency. Calculate the proportion of alcohol-soluble extractive using the air-dried medication as a reference.

Determination of water-soluble extract

Insoluble debris was collected on an ashless filter paper, which was then rinsed with hot water and burned for 15 minutes in a muffle furnace at a temperature not exceeding 450°C. The weight difference between ash and insoluble matter was calculated, and the difference was used to calculate the value. [12] Using air-dried powdered medication material as a reference, the proportion of water-insoluble ash was estimated.

Calculation formula:

% of water-Insoluble *Ash* = Weight of *water-insoluble* residue/Weight of sample taken X 100%

Determination of moisture content (loss on drying)

Place 12 grams of medicine in a tared evaporating dish after correctly weighing it, dry at 1050 for 5 hours, and weigh. Continue drying and weighing every hour or so until the difference between two consecutive weighing is less than 0.25 percent [13]. When two successive weighing after drying for 30 minutes and chilling for 30 minutes in a desiccator show a variation of less than 0.01 g, the weight is said to be constant.

Result-

Table 3- The organoleptic character of *Narach Churna*

Sr no	Description	Result
1	Colour	yellowish
2	Odor	Characteristic katuodor
3	Taste	katu
4	Form	Solid -finest

Table 4- Physicochemical analysis of *Narach Churna*

Sr.No.	Description	Result	Result	Result
		Batch A	**Batch B**	**Batch C**
1	PH	3.3	2.9	3.4
2	Total ash value	3.57	2.45	2.62
3	Water-soluble extractive	49.46	42.8	42.43
4	Alcohol soluble extractive	27.01	28.65	25.64
5	Loss on drying	12.77	12.63	9.23
6	Acid insoluble ash	3.42	6.12	5.78

Discussion

Narach Churna from Brand A was a brown powder with a distinctive odour and salty-sour flavour. The pH of this preparation was 3.3, and the loss on drying was 12.77 percent w/w. Alcohol soluble extractives were 27.01 percent w/w and water-soluble extractives were 49.46 percent w/w in the preparation. The powder's bulk and tapped densities were 0.757 and 0.722, respectively. The powder flow was fair to good, with a Carr's Index of 21.08 percent (Fair), a Hausner's ratio of 1.24 (Fair), and a 32.604° Angle of repose (Good). It included 3.62 percent w/w total ash, 2.96 percent w/w acid insoluble ash, and 5.98 percent w/w water-soluble ash, respectively [14]. The loss on ignition was determined to be 97.08 percent weighted average. Lead and Cadmium concentrations were determined to be 1.567 and 0.324, respectively, which were within the allowed limits. Carbohydrates, Steroids, Flavonoids, Tannins, Phenols, and Ascorbic acid were found in both extracts, but Saponins were found exclusively in the aqueous extract.

Narach Churna from Brand B was a light brown powder with a distinctive odour and salty-sour flavour. The pH of this mixture was 2.9, and the loss on drying was 12.63 percent w/w. Alcohol soluble extractives were 28.65% w/w and water-soluble extractives were 42.8 percent w/w in the preparation, respectively [15]. The powder had a bulk density of 0.674 and a tapped density of 0.787, respectively.The powder flow was poor-very bad, with a Carr's Index of 35.60 percent (very poor), a Hausner's ratio of 1.70 (very poor), and a 54.604° Angle of repose (Poor). It had 4.64 percent w/w total ash value 2.45 percent w/w acid insoluble ash, and 6.12 percent w/w water-soluble ash. 95.75 percent w/w loss on ignition was discovered. Lead and Cadmium concentrations were discovered to be 3.354 and 0.234, respectively, which were both within the allowed limits. Glycosides, Carbohydrates, Steroids, Flavonoids, Tannins, Phenols, and Ascorbic acid were found in both extracts, but Saponins were only found in the aqueous extract. *Narach Churna* from Brand C was a yellowish-brown powder with a distinctive odour and unpleasant flavour. The pH of this mixture was 3.4, and the loss on drying was 9.23 percent w/w. Alcohol soluble extractives were 25.64 percent w/w and water-soluble extractives were 42.43 percent w/w in the preparation. The powder had a bulk density of 0.765 and a tapped density of 0.876, respectively. The

powder flow was acceptable, with a Carr's Index of 21.34 percent (Passable), a Hausner's ratio of 1.65 (Passable), and a 41.768° angle of repose (Passable). It had 3.67 percent w/w total ash value 2.62 percent w/w acid insoluble ash 5.78 percent w/w water-soluble ash, respectively. The loss on ignition was determined to be 98.89 percent weighted average.

Narach Churna is a straightforward recipe that uses readily accessible ingredients. *Narach Churna* may provide a good therapeutic outcome with fewer ingredients and is practicable in patients suffering from constipation and Adhman, which is a typical condition caused by a bad lifestyle and modernized eating habits. Trivrutta, one of the constituents of *Narach Churna*, has cleansing and purgative qualities. The purgative activity of these drugs helps with gas, indigestion, and unsatisfactory bowel movements, among other things. It also aids in stool transit. Additionally, the plant aids in the prevention of constipation. Pippali is beneficial to food digestion, absorption, and metabolism.

CONCLUSION

Except for significant variance in the flow qualities of the powder of all three brands, all of the parameters of *Narach Churna* had nearly identical values and were compliant with the standard values indicated in the pharmaceutical values. As a result of the overall findings, it can be concluded that phytochemical and analytical evaluations of all formulations should be performed analytically on each batch tooptimize the final product according to pharmacopoeial standards, which will most likely affect the therapeutic activity of the product. The study's findings might be used as a guide for establishing limitations for reference standards for quality control and quality assurance of these medications.

Conflict of interest -Nil

Source of Support -None

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