

 International Journal of AYUSH	IJAYUSH International Journal of AYUSH	ISSN: 2349-7025  OPEN ACCESS  PEER REVIEWED ★  MONTHLY
	AYURVEDA • YOGA • UNANI • SIDDHA • HOMEOPATHY	
	https://internationaljournal.org.in/journal/index.php/ijayush/	

Review Article	Volume 15 Issue 10	October 2026
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A CLASSICAL DRUG REVIEW ON NISHA AMALAKI CHURNA W.S.R. TO PRAMEHA (DIABETES MELLITUS TYPE - 2)

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DOI: <https://doi.org/10.5281/zenodo.23330602>

Abstract

Background: Prameha (Diabetes mellitus Type - 2) is Santarpanajanya Vyadhi. About 90% of the estimated 387 million cases of diabetes globally as of 2014 were type-2. According to WHO predictions, emerging nations will bear a significant portion of the burden. Nisha Amalaki Churna is a formulation consists of herbal drugs as mentioned in Ashtanga Hridayam.

Material and Methods: Ayurvedic texts, as well as the data bases Google scholar, PubMed, Medline, AYUSH Research Portal, and Digital Helpline for Ayurveda Research Articles (DHARA), Research Gate web-based search engines, journal, were used to search for relevant literature and information.

Result: Prameha (Diabetes mellitus Type - 2) is Tridoshaja Vyadhi, Acharyas have mainly emphasized on vitiation of Kapha Dosha and also emphasized on Medovridhhi and Medodhatwagnimandhya. Nisha Amalaki Churna referred in Ashtanga Hridayam was reviewed, analysed in detail. Drugs are having Pramehara property directly acting on etiopathogenesis of Madhumeha. Tikta, Katu, Kashaya Rasa, Laghu, Ruksha Guna, Ushna Virya and Katu Vipaka may correct Kapha Dushti and Medo Dhatu Dushti. Laghu, Ruksha Guna by their Deepana Pachana property may remove Medodhatwagnimandhya there by correcting the Medo Dhatu Dushti. Pharmacological activity like anti-diabetic, anti-hyperlipidemic, antiobesity, etc effect were also reported.

Conclusion: The classical formulation Nisha Amalaki Churna is a very unique and finds its great utility in management of Prameha (Diabetes mellitus Type-2).

Keywords: Anti-diabetic, Diabetes mellitus Type-2, Nisha Amalaki Churna, Prameha.

1. Introduction

Prameha includes a variety of illnesses that cause different chemical and physical alterations in urine. The manifestation of the diseases is described as "Prabhutavilamutrata," which means frequent and copious urine with turbidity. Two main kinds of Prameha are reflected in the Ayurvedic writings i.e. 1. Prameha Sahaja 2. Apathyanimittaja Prameha. Among these two, Apathyanimittaja Prameha is most similar to the modern notion of Type-2 Diabetes mellitus. It is also thought that Prameha transforms into Madhumeha, which is extremely similar to diabetes mellitus, the most crippling illness, if it is not cured or managed appropriately over time. The primary treatment premise of Ayurveda is the elimination of the etiological causes. Sanshodhan (biocensing) and Sanshamana (palliation) are the two main facets of Ayurvedic treatment. As a result, the usage of herbal and herbo-mineral medicines as well as diet and exercise regulation have received particular attention. According to Ayurveda, diabetes has a multifactorial origin and is one of the eight major diseases (Asthamahagada) that are refractory and hard to treat. This disorder is thought to be caused by dietary, behavioral, environmental, and hereditary factors.

The primary dietary, lifestyle, and environmental factors that aggravate Kapha Dosha include eating excessively, leading a sedentary lifestyle, consuming certain foods from areas with enriched water resources (Anupadesha), consuming freshly harvested foods and grains (Navannapana), consuming sweet foods (Gudavikrita), and all other food and lifestyle factors. Hereditary variables (Jatah-Pramehi) and genetic association (Beeja Dosha) have also been found to be important etiological factors. According to Ayurvedic scriptures, the characteristics of Prameha bear a striking resemblance to the Type 2 Diabetes condition. The vitiation of Kapha Dosha, Medovridhi, and Medodhatwagnimandhya, which is Tridoshaja Vyadhi, has been the main concern of Acharyas. According to Charak, the main causes (Nidana) of Prameha are Madhura, Amla, and Lavana Rasa. The diet known as 'Gramya Udaka Aanupa Rasa Payansi Dadhini' and lifestyle choices like 'Aasya Sukham Swapna Sukham' are comparable to the causes listed in contemporary medical literature as overeating, consuming a lot of carbohydrates, primarily sugar-rich substances, dairy products, leading a sedentary lifestyle, and being overweight. The Sahaj and Apathya-Nimattaja types of Prameha are mentioned by Sushruta. All of these elements mentioned in various Ayurvedic literature suggest that lifestyle has a significant impact on Prameha growth.

Type-2 diabetes mellitus is one of the most prevalent lifestyle disorders in the modern era. India has the worst diabetes epidemic, with 32 million people living with the disease in 2000,

according to a World Health Organization (WHO) estimate. There are currently about 33 million adults with diabetes in the world's diabetic capital, and by 2025, that number is probably going to rise to 57 million.

Oral hyperglycemic medications (OHD) plus diet and exercise are the most common treatments. Since there is no known cure and the effects are extremely dangerous, controlling the disease is crucial. Many adverse effects are associated with oral hypoglycemic medications used in the allopathic medical system to treat type 2 diabetes. Because of its all-encompassing approach, Ayurveda treats the disease's underlying causes in addition to striving for strict glycemic control. Ayurvedic medications can effectively treat diabetes mellitus with no dangerous side effects.

For the same reason, Nisha Amalaki Churna were chosen. So for disintegrating the Samprapti, Amalaki Nisha Churna are formulations for Prameha patients that oppose Kapha Dosha and Medodhatu at the Dhatwagni level. The elements may aid in Samprapti Vighatana of Prameha since they contain Tikta, Katu, Kashaya Rasa, Laghu, Ruksha Guna, Ushna Virya, and Katu Vipaka. The medication has been shown to have an antihyperglycemic impact. As a Tridoshaghna, it corrects Dosha to achieve equilibrium and functions as an immunomodulator through its Rasayana effect. As well-established hypoglycemic or antihyperglycemic medications, Nisha and Amalaki may aid in breaking down the pathophysiology of Prameha (type 2 diabetes).

2. Materials and Methods

2.1. Method of review

All the relevant Ayurvedic texts, as well as the data bases Google scholar, PubMed, Medline, AYUSH Research Portal, and Digital Helpline for Ayurveda Research Articles, dissertation works from Ayurveda colleges, studies available on Research Gate web-based search engines, journal, were used to search for relevant literature presented in systematic manner.

2.2. Procurement of Trial Drugs

All required raw materials were procured from local vendors of Chhapra (Saran). Drugs were authenticated from department of Dravyaguna, SMSJ Ayurved College and Hospital, Chapra, Bihar.

2.3. Preparation of Drugs

All the drugs were prepared as per the method of preparation of Churna as mentioned in Sharangadhara Samhita.

2.4. Materials for Mustadi Kwath

The drugs under trial for present study is Nisha Amalaki Churna, their properties mentioned in Ayurveda texts as well as in the modern texts were collected and presented in complied manner. Description of ingredients of Nisha Amalaki Churna, English / Latin name, Part used and its quantities are as given in Table 1:

Table 1: Ingredients of 'Nisha Amalaki Churna' with its quantity

Sr. No.	Name of Ingredient	Latin name	Part Used	Quantity
1	Nisha	Curcuma longa Linn.	Rhizome	1 part
2	Amalaki	Emblica Officinalis Gaertn.	Fruit	1 part

Table 2: Ingredient of Nisha Amalaki Churna & its pharmacological properties

Sr.	Ingredient	Rasa	Guna	Veerya	Vipaka	Doshaghnata	Karma
1	Nisha	Katu, Tikta	Ruksha	Ushna	Katu	Kaphaghna, Pittaghna	Lekhana, Anulomana, Kleda-shoshana
2	Amalaki	Pancha Rasa (Amla Rasa Pradhana, Lavana varjit)	Laghu Ruksha	Sheeta	Madhura	Tridosahar (Specially Pitta Shamaka)	Chedana, Upashoshana, Kledashodhana, Rasayana

3. Result

The pharmacological properties of the formulation can be explained on the basis of the individual drug properties as mentioned below:

Nisha

Latin Name	Curcuma longa Linn
Family	Zingiberaceae
Synonyms	Rajani, Nisha, Pitta, Kanchani
Vernacular Name	English Name: Turmeric; Hindi Name: Haladi
Classical Categorization	Charaka: Kusthaghna, Lekhaniya; Sushruta: Haridradi Gana, Mustadi Gana
Part Used	Rhizome

Rasapanchaka	Rasa: Katu, Tikta; Guna: Ruksha; Virya: Ushna; Vipaka: Katu; Doshghnata: Kaphaghna, Pittaghna
Karma	Krimighna, Kushtaghna, Varnya, Vishaghna
Therapeutic uses	Pramehaghna, Kushthaghna, Anulomana, Jwarghna, Raktaprasadana, Mutravirajaniya, Lekhana, Kleda-shoshana
Chemical constituents	Root contains termerone; -(+), α -, and β -termers; β bisabolene; α -curcumene; zingiberene; β -sesquiphellanderene; bisacurone; curcumenone; dehydrocurdione; procumadiol; bis-acumol; curcumenol; isoprocumumenol; epiprocumumenol; procumumenol; zedoaronediol; and curlone, many of which are specific for a species. The components responsible for the aroma of turmeric are turmerone, arturmerone, and zingiberene. The rhizomes are also reported to contain four new polysaccharides-ukonans along with stigmasterole, β -sitosterole, cholesterol, and 2-hydroxymethyl anthraquinone. Nutritional analysis showed that 100 g of turmeric contains 390 kcal, 10 g total fat, 3 g saturated fat, 0 mg cholesterol, 0.2 g calcium, 0.26 g phosphorous, 21 g dietary fiber, 3 g sugars, and 8 g protein.
Pharmacological actions	Anti-diabetic, anti-cancer, anti-oxidant, anti-microbial.

Amalaki

Latin Name	Embelica officinalis Gaertn.
Family	Euphorbiaceae
Synonyms	Vayastha, Vrushya, Jatiphalarasa, Shiv, Dhatriphala, Shreephala, Amrutaphala
Vernacular Name	English Name: Indian Gooseberry; Hindi Name: Amla, Aonla
Classical Categorization	Charaka: Jvaraghna, Kusthaghna, Vayasthapana; Sushruta: Amalakyadi, Parushkadi, Triphala; Bhavaprakasha: Triphala
Part Used	Fruits
Rasapanchaka	Rasa: Pancha Rasa (Amla Rasa Pradhana, Lavana varjita) (API); Guna: Laghu, Ruksha, Sara, Mrudu; Virya: Sheeta; Vipaka: Madhura; Doshghnata: Tridosahara (Specially Pitta Shamaka)
Karma	Dahaparasmana, Kesya, Medhya, Raktaprasadana, Pramehaghana, Pachana, Deepana, Kusthaghna, Rasayana, Chedana, Upashoshana, Kledashodhana
Therapeutic uses	Aruchi, Hridroga, Kasa, Swasa, Raktapitta, Jwara, Prameha, Kustha, Khalitya, Palitya, Agnimandya, Daha, Vibandha, Amlapitta, Udavarta, Pradara, Shotha.

Chemical constituents	A good source of vitamin C, carotene, nicotinic acid, riboflavine, D-glucose, D-fructose, myoinositol and a pectin with D-galacturonic acid, D-arabinosyl, D-xylosyl, L-rhamnosyl, D-glucosyl, D-mannosyl and D-galactosyl residues, embicol, leucodelphinidin, procyanidin, 3-O-gallated prodelphinidin and tannin (bark), ellagic acid, lupeol, oleanolic aldehyde and O-acetyl oleanolic acid (root), tannins, polyphenolic compounds, 1, 2, 3, 6 trigalloylglucose, terchebin, corialgin, ellagic acid, alkaloids, phyllantidine and phyllantine (leaves & fruits).
Pharmacological actions	Anti-tumour, spasmolytic, mild CNS depressant, hypolipidaemic, anti-atherosclerotic, hepatoprotective, anti-mutagenic, antimicrobial, antioxidant, immunomodulatory, antifungal, hypoglycaemic, anti-inflammatory, antibacterial, antipyretic and analgesic activity, anti-peptic ulcer and hepatoprotective activities.

Table 3: Average of Pharmacodynamics of Nisha Amalaki Churna

Properties	Observations in Nisha Amalaki Churna	
Properties	Total No. of Drugs	Percentage%
Rasa		
Madhura	1	50
Amla	1	50
Katu	2	100
Tikta	2	100
Kashaya	1	50
Guna		
Laghu	1	50
Ruksha	2	100
Sara	1	50
Mridu	1	50
Vipaka		
Madhura	1	50
Katu	1	50
Virya		

Ushna	1	50
Sheeta	1	50
Doshaghnata		
Vata	1	50
Pitta	2	100
Kapha	2	100
Karma		
Anulomana	1	50
Dipana	1	50
Pachana	1	50
Lekhana	1	50
Chedana	1	50
Upashoshana	1	50
Kleda-shoshana	2	100
Pramehaghna	2	100

4. Discussion

The etiopathogenesis of Prameha was directly impacted by drugs with Pramehara properties. Kapha Dushti and Medo Dhatu Dushti may have been repaired by Tikta, Katu, Kashaya Rasa, Laghu, Ruksha Guna, Ushna Virya, and Katu Vipaka. By removing Medodhatwagnimandya, Ruksha Guna's Deepana Pachan property corrects Medo Dhatu Dushti; Amalaki's Tridosha Shamak property corrects Tridosha vitiation and restores normal functioning of Dosha Dhatu; and Sara Guna enters all Srotas. Nisha having Kapha Pitta Shamak property corrects vitiated Kapha Pitta, allowing Dosha Dhatu to function regularly. Pitta vitiation may have been rectified by Tikta Rasa and Sheeta Virya Dravyas. Preparation acted on Kapha-Pitta and Kapha Vargiya Dushya in this way, offering substantial relief on a number of metrics. The medicine Tridosha Shamaka also elevates Vata Dushti, thus normal functioning of Dhatus alleviate the symptoms. The obstacle to Vata's route is removed when Kapha-Pitta is elevated. As a result, Samprapti Vighatan eventually occurs (Table 2 & 3).

The following outcomes are necessary for an Ayurvedic medication i.e. Nisha Amalaki Churna to treat Prameha. Since Rasa is the primary source of nutrition for Rakta, Mamsa, Meda, and other Dhatus, it should perform Amapachana and Shodhana at the Rasa Dhatu level. After passing through the Rasadi Dhatus, it should arrive at the level of Medha Dhatu. By correcting the pacified Medodhatvagni and advancing the Jatharagni, it should halt the pathology leading to an excess of Meda Dhatu. The existing Kapha, Mamsa, Meda, Vasa, Kleda, and Sweda should undergo Lekhana and Upshoshana.

5. Conclusion

The classical formulation Nisha Amalaki Churna were recommended in Santarpanjanya vyadhis has nearly every characteristic needed for a medication to treat Prameha (DM Type 2) and therefore need scientific evaluation through pharmacological and clinical studies to validate the same. Large scale manufacturing and multiples of clinical trials can be useful for generation of large amount of clinical trial data.

Competing Interest

Authors have declared that no competing interest exist.

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