

Review Article

Role of Yava (Barley) based diet in lifestyle disorders w.s.r. to Diabetes Mellitus

ABSTRACT:

In the present era, people are turn towards modernization and comfort. They adopt faulty dietary habits along with sedentary lifestyle impaired individual health and result in manifestation of plenty of lifestyle disorders. Diabetes Mellitus is one among them. Diabetes Mellitus has significant effects on an individual's quality of life as well as their life expectancy. Diabetes Mellitus becomes a key etiological factor for other life-threatening clinical entities. The treatment for this entity through modern medical sciences involves multi-drug regimens; they might be associated with various side effects. Here *Nidānaparivarjana* and lifestyle modifications can play a key role in the management Diabetes Mellitus. *Tṛṇadhānya* (millets) involved in routine diet as a staple diet has tremendous effect in these kinds of Lifestyle disorders. There are scattered descriptions regarding *Tṛṇadhānya* are found in *Bṛhat trayī* and as individual chapter is found in different *Nighaṅtu* along with their *Guṇa* (properties) and *Karma* (functions). Most of the *Tṛṇa dhānyas* have *Rukśa*, *Laghu guṇa*, *Kaṭu vipāka* and *Uṣṇa virya* which will help in mitigating the *Medodhātu* and *Kapha doṣa* which excesses in the body might be result in manifestation of lifestyle disorders including Diabetes mellitus, Obesity, Coronary artery disease Hypertension, Infertility etc. *Āyurveda* can manage the Diabetes Mellitus in better way through modification in *Āhāra* (Diet) – *Vihāra* (Lifestyle) and *Nidānaparivarjana*. The utilities of the *Tṛṇa dhānya* as preventive and curative aspect in lifestyle disorders w.s.r to Diabetes Mellitus, are trying to explore in this article. We have tried to uncover some facts regarding *Tṛṇa dhānya* written in *Samhitā* and *Samgraha granth*, which have never been noticed yet.

Keywords: Lifestyle disorders, *Tṛṇadhānya*, Yava, Diabetes Mellitus, Obesity,

INTRODUCTION:

Diabetes Mellitus type 2 is one of the most crucial metabolic disorders characterized by Hyperglycemia and impaired Insulin secretion. Its progression is followed by Diabetic keto acidosis (DKA), and also associated with a number of complications like Retinopathy, Nephropathy, Neuropathy, Peripheral vascular insufficiencies that can result in limb amputation and most critical complication is Diabetic coma.¹ *Ācārya Suśruta* emphasized the importance of *Nidāna parivarjana* and *Vyāyāma* in patients of *Prameha* and *Sthaulya*, as well as for maintaining the homeostasis in *Doṣa* for healthy living. *Tṛṇadhānya* are described in *Bṛhat trayī* under the *Dhānyavarga* and as individual chapter is found in different *Nighaṅtu*. Wheat and Rice are recognized as Staple diet in India. Both are increase Kapha dosha and Medo dhatu which lead to Diabetes Mellitus, Obesity etc lifestyle disorders. Wheat is high in sodium which might be cause Hypertension. Here these both are altered with *Tṛṇa dhānya* w.s.r. to Yava which will help to prevent and manage lifestyle disorders especially Diabetes Mellitus and Obesity.

AIM & OBJECTIVE:

1. To conceptualize the knowledge regarding *Tṛṇadhānya* (Millets)
2. To understand the utilities of Yava and (Millets) in Diabetes Mellitus

MATERIAL & METHOD:

This study is based on the literature review. Material has been collected from Ayurvedic texts e.g. *Caraka saṁhitā*, *Suśruta saṁhitā*, *Aṣṭāṅga hṛdaya*, *Bhāvaprakāśa nighaṅtu*, *Dravyaguṇa Vijñāna*, *Rāj nighaṅtu*, *Kaideva nighaṅtu* with different commentaries, Research articles, Modern texts and National research databases.

RESULT:

Yava:

Sarṁśodhanam nārhati yah pramehī tasya kriyā sarṁśamanī prayojyaa | (Ca.Ci. 6/18)

*Saṣaṣṭikam syāt **trnadhāṅnyam annam yavapradhānastu bhavet pramehī*** | (Ca.Ci. 6/21)

*Yavah **kaṣāya** madhura suśītalah **pramehajita tikta** kaphāpahārahah* | - (Raj nighaṅtu –Śālyādivarga)

*Yavah **kaṣāyo** madhuro himaśca **kaṭu vipāke** kaphapittahārī* ||

*vraṇeṣu pathyastilavat ca nityam **prabaddhamūtro** bahuvātavarcāh* |

*sthairyā agni medhā **balavarṇakṛcca** sapicchilah **sthūlavilekhanaśca** ||*

*mehāpaha **trṣamano atirukṣah** prasādanah Śoṇitapittayośca* | - (Śoḍhala nighaṅtu)

Table 1: Rasa Pañcaka of Yava

Rasa	<i>Kaṣāya- Tikta- Madhura</i>
Vipāka	<i>Kaṭu</i>
Vīrya	<i>Śīta</i>
Guṇa	<i>Laghu, Rukṣa</i>
Prabhāva	<i>Pramehajita</i>

DISCUSSION:

As per *Ayurveda*, Yava has a tremendous effect found in *Prameha* and its *Upadrava*. Yava's properties and its functions are as follow:

Table 2. Yava's properties and its functions

<i>Yava's Guṇa- karma</i>	<i>Utility in Diabetes Mellitus</i>
<i>Yavapradhānastu bhavet pramehī</i>	As per <i>Ācārya Caraka</i> , Yava use as staple diet is best in Diabetes Mellitus

<i>Pramehajita</i>	Cure Diabetes Mellitus
<i>Tikta, Kaṣāya rasa & Kaṣu vipāka</i>	These <i>guṇas</i> help to reduce excess <i>Kapha doṣa</i> and <i>Medo dhātu</i> which are culprit for Diabetes mellitus
<i>Kaphāpahāraka</i>	These <i>karma</i> help to reduce excess <i>Kapha doṣa</i> which are important humor for Diabetes mellitus
<i>Prabaddhamūtro</i>	Help in control excessive urination (Polyuria) which is chief clinical feature seen in Diabetes mellitus
<i>Tṛṣāmano</i>	Help in mitigate excessive thirst (Polydipsia) which is also inculcated as chief symptoms of Diabetes mellitus
<i>Hima, suśītala</i>	This <i>guṇa</i> is help to reduce <i>hastapādataladāha</i> (burning sensation in palm and sole) which is frequently seen in Diabetes mellitus as a complications
<i>Vraṇeṣu pathya</i>	Beneficial in <i>Madhumehajanīta duṣṭa vraṇa</i> (Diabetic non healing foot ulcers)
<i>Balavaṇakṛcca</i>	Enhance Strength and Complexion which are usually impaired in Diabetes mellitus due to impaired utilization of Blood glucose
<i>Sthairya</i>	Help in reduce <i>Dhātu śhaithilya</i> and <i>Abaddha meda</i> which is beneficial in Diabetes as well as in Obesity
<i>Sthūlavilekhana</i>	Reduce obesity and it is already proved that obesity is a prime etiological factor for Diabetes mellitus
<i>Mehāpaha</i>	Reduce lipids and fat which will cause Obesity and increases <i>Abaddha meda</i> in Diabetes mellitus
<i>Atirukṣa</i>	Dried up <i>Abaddha meda</i> , <i>Kapha</i> which help to prevent as well manage the Diabetes and Obesity

Ācārya Suśruta mentioned that there are 2 types of *Pramehī*- 1. *Sahaja* and 2. *Apathyanimmitaja*. *Apathyanimmitaja Pramehī* is also recognized as *Sthūla Pramehī* its simply mean that unhealthy food habit in terms of excess carbohydrate and sugary food items increases *Kapha doṣa* and *Meda dhātu* result in manifestation of Diabetes Mellitus and Obesity. In all over India, Wheat (*Triticum sativum*) and Rice (*Oryza Sativa*) are used in routine diet as staple food. These both are used in the forms of Chapati, Parathas, Pudla, Dal-rice, Idli, Dhosa, Vada etc.

Yava (*Hordeum vulgare*) is the world's fourth most important cereal crop after wheat, rice and maize. It is readily available with reasonable cost, and has the highest amount of dietary fiber with less amount of

gluten among the all cereals which is beneficial in Diabetes mellitus, Obesity, Dyslipidemia like lifestyle disorders etc.² Wheat (*Triticum sativum*) and Rice (*Oryza Sativa*) have high Glycemic index (GI) and Glycemic load (GL) e.g. Wheat has 73 GI and 10 GL³; and Rice has range between 48-92 (average 70) GI⁴. As compared to them *Yava* (Barley) has very low GI (28 GI) which is tremendous effect to lower the blood sugar. *Yava* has high- β -glucan which decreases postprandial insulin hyper secretion, which may contribute to further prevention of Diabetes Mellitus and other metabolic syndrome and improvement of insulin sensitivity with prolonged ingestion.⁵ *Yava* can utilized flour in the forms of Chapati, Bread, Sattu; use whole *Yava* in the form of Khichadi, gruel.

CONCLUSION:

This is a conceptual article, the knowledge we gain from the study can be useful in clinical practice. Analyzing the general qualities and effects of *Yava* (Barley) explores an obvious idea that *Yava* is best advised in *Prameha* (Diabetes mellitus), *Sthaulya* (Obesity) and *Medoroga* (dyslipidemia). Apart from all the *gunas*, *Yava* is very dry in nature, always prepared food with adding any healthy *Snigdha dravya* e.g. *Tila taila* or *Go ghrta*. *Tila taila* or *Go ghrta* considered as healthy fat for lifestyle disorders can use in Diabetes mellitus.

References:

¹ M. Minaiyan; A. Ghannadi; A. Movahedian; I. Hakim-Elahi, Effect of *Hordeum vulgare* L. (Barley) on blood glucose levels of normal and STZ-induced diabetic rats; Research in Pharmaceutical science : 2014 May-Jun; 9(3): 173–178.

² M. Minaiyan; A. Ghannadi; A. Movahedian; I. Hakim-Elahi, Effect of *Hordeum vulgare* L. (Barley) on blood glucose levels of normal and STZ-induced diabetic rats; Research in Pharmaceutical science : 2014 May-Jun; 9(3): 173–178.

³ <https://www.clevelandheartlab.com/wp-content/uploads/2021/03/Quest-CHL-Glycemic-Index.pdf>

⁴ F Kusmiyati; D R Lukiwati; B A Kristanto; and B Herwibawa. Glycemic index of ten commercially Indonesian rice cultivars. IOP Conference Series: Earth and Environmental Science; 2019

⁵ Yuki Fuse; Mariko Higa; Naoko Miyashita; Asami Fujitani; Kaoru Yamashita; Takamasa Ichijo; Seiichiro Aoe; and Takahisa Hirose. Effect of High β -glucan Barley on Postprandial Blood Glucose and Insulin Levels in Type 2 Diabetic Patients: Clinical Nutrition Research: 2020 Jan; 9(1): 43–51