

YAVA (BARLEY) THE DISEASE SPECIFIC DIET IN PRAMEHA**Sridhar Reddy¹, Ashok², Anand Katti³, Shreevathsa⁴**¹. PG Scholar, Dept of PG studies in Ayurveda Siddhanta, GAMC Mysore, Karnataka, India.². PG Scholar, Dept of PG studies in Ayurveda Siddhanta, GAMC Mysore, Karnataka, India.³. Lecturer, Dept of PG studies in Ayurveda Siddhanta, GAMC Mysore, Karnataka, India.⁴. Professor (I/c) and Head, Dept of PG studies in Ayurveda Siddhanta, GAMC Mysore, Karnataka, India.**ABSTRACT**

Ayurveda has got three fold management of all diseases viz., *Ahara* (diet), *Vihara* (exercise) and *Aushadha* (drug). *Acharya Charaka* states that we all are outputs of aharaso are the diseases. Disease specific dietary measures are the unique concept of *Ayurveda*. According to *Acharya Charaka* yava is the mentioned as a specific diet in prameha. The important pharmacological actions of *Yava* (*Hordeum vulgare*) like Glycemic response to carbohydrate consumption, Effect on Carbohydrate Metabolism, The role of micronutrients of *yava* (barley) in diabetic health has now turned out to be an effective mean to avoid as well as to control *prameha* (Diabetes Mellitus). A properly selected diet plan (*patya*) plays a critical importance in disease management. The present paper aims at putting forward the importance of *yava* in *prameha* from *Ayurvedic* and contemporary perspective.

Key words: *Hordeum vulgare*, *Patya*, *Prameha*, *Yava***INTRODUCTION**

Acharya charaka defined *patya* as that which does not deviate from the path or which is conducive to the path¹. For this *Cakrapani* comments *swastaswastyaraksanam aturavyadhiparimokshanacheti patya*. It aids in the alleviation of disease and building up of *swastha*². *Patya* for *swasta* has been explained in the form of *nitya sevaniya ahara* and according to the season in *rutucharya*. *Patya* for *atura* explained in respective disease throughout the *samhitas*. *Yava* (*Hordeum vulgare*) is one of the specific *patya* explained in *prameha* (Diabetes). A different

preparation of *yava* has been explained in *samhitas* under *pramehachikitsa*. There is detailed description of *Yava* in various *samhita* and *nigantu* under *dhanya varga*. Approximately 50% of the new cases of diabetes can be controlled by dietary management. The dietary management aims to prevent diabetic microangiopathy by avoiding sustained hyperglycaemia. To reduce the incidence of atherosclerosis by lowering blood lipids, maintaining an ideal body weight and avoiding hyperinsulinemia.

Table No 1: PROPERTIES OF YAVA

	<i>Charak</i>	<i>Sushruta</i>	<i>Vagbhata</i>
Rasa	<i>Kashaya, Madhura</i>	<i>Kashaya, Madhura</i>	<i>Kashaya, Madhura</i>
Guna	<i>Ruksha, Aguru</i>	<i>Ruksha, Guru, Pichhila</i>	<i>Ruksha, Guru, Sara</i>
Veerya	<i>Sheeta</i>	<i>Sheeta</i>	<i>Sheeta</i>
Vipaka	<i>Katu</i>	<i>Katu</i>	<i>Katu</i>

Doshagnata	<i>Kaphapittashamaka</i>	<i>Kaphapittashamaka</i>	<i>Kaphapittashamaka</i>
Rogagnata	<i>Sthairyakara, Medoroga</i>	<i>Rakthapitt, naVrana, Medoroga.</i>	<i>Trish- Pinasa, Shwasa, Kasa, Urustarnbha,</i>

NUTRITIVE VALUE OF YAVA (BARLEY)³**Table No 2:** Raw barley Nutritional value per 100 g (3.5 oz.)

Energy	1,474 kJ (352 kcal)
Carbohydrates	77.7 g
Sugars	0.8 g
Dietary fibre	15.6 g
Fat	1.2 g
Protein	9.9 g
Thiamine (vit. B1)	0.2 mg (17%)
Riboflavin (vit. B2)	0.1 mg (8%)
Niacin (vit. B3)	4.6 mg (31%)
Vitamin B6	0.3 mg (23%)
Calcium	29.0 mg (3%)
Iron	2.5 mg (19%)
Phosphorus	221 mg (32%)
Zinc	2.1 mg

YAVA IN PRAMEHA

1. Among all *pathya*, yava is more highlighted by all the *Acharyas* by telling “*yavapradhanastubhavetpramehi*”. The different preparations of *yava* are explained in the text like *Yavaudana* (yavanna), *Vatya* (yavamanda), *Yava Saktu* (flour of yava), *Apoopa* (like chapatti, poori), *Dhana* (fried yava)⁴

2. *Yava* should constitute the principal ingredient of food of the patient suffering from *prameha*. The patient suffering from *Kaphaja prameha* should take eatables prepared of *yava* mixed with honey. *Yava* soaked in the decoction of *triphala* and kept overnight mixed with honey. It is a *tarpana* (refreshing) diet. It should be given to the patient suffering from *prameha* regularly to overcome the disease.⁵

3. Persons habitually taking roasted *yava*, *dry corn-flour*, *mudga* and *amalaka*

do not suffer from *prameha*, *svitra*, *kricchramutrata* and *kaphaja kushtha*⁶.

4. *Prameha* patient should take food prepared from old *sali*, *shastika*, *yava*, *godhuma*, *kodrava* or *uddalaka* etc. along with *yusaofcanaka*, *adhaki*, *kulattha* and *mudga*⁷.

5. *Vatya* prepared from either *yava* which has come out of the rectum of an elephant or horse (which have been fed sumptuously with *yava* earlier)⁸.

6. Foods and drinks should be prepared from either *yava* or *godhuma* which have been soaked in the decoction of indicated drugs in *prameha chikitsa*⁹.

7. *Yava* is soaked in the decoction of *vara* (*triphala*) for the night and dried in the day. *Saktu* (paste of flour) prepared from this *yava* should be consumed along with *sidhu* and added with honey¹⁰.

MODE OF ACTION**Glycemic response to carbohydrate consumption**

The worldwide incidence of diabetes is increasing rapidly, as well as a related condition called the metabolic syndrome (CDC 2007). Both of these conditions are related to carbohydrate metabolism, in which food carbohydrates are digested into glucose and absorbed as such into the bloodstream. This action stimulates the release of insulin from the pancreas into the blood, facilitating the entry of glucose into body cells. In diabetes, there is either an absence of insulin (type 1) or inefficient use of insulin (type 2) by the cells, causing glucose to build up in the blood, thereby creating serious complications if treatment is not provided. In the condition known as the metabolic syndrome, the body cells do not respond normally to insulin, resulting in elevated insulin as well as elevated glucose in the blood. This relative insulin resistance initiates further complications, such as abdominal obesity, hypertension, and elevated blood triglycerides. Carbohydrate foods differ in their rate of digestion and absorption into the blood, and these differences were the basis of establishing the glycaemic index (GI) (Brand-Miller 1994). Food carbohydrates, especially starch, that have slower rates of digestion, are sometimes termed “lente” or slowly digested and absorbed carbohydrates. In general, foods with a high GI value are processed rapidly in the digestive tract, causing a steep high peak in blood glucose, and in normal individuals are followed by a corresponding rapid release of insulin. Low-GI foods, on the other hand, have slower absorption with a blunted, lower, and more prolonged glucose peak.¹¹

EFFECT OF BARLEY ON CARBOHYDRATE METABOLISM

Investigation of the effect of barley on carbohydrate metabolism has intensified since Sato et al. (1990) reported that plasma glucose concentration in patients-

both with and without diabetes was lower after barley consumption than after rice consumption. Research studies on the glycaemic effects of barley have focused on one of two major aspects: (1) β -glucan as a viscous fiber, and (2) starch composition ratio of amylose to amylopectin. In many cases the glycaemic response to barley foods will be due to a combination of these two factors. Ikegami et al. (1991) in Japan measured glycemic responses in normal and diabetic rats fed a barley diet. All animals exhibited improved glucose tolerance, and fasting blood glucose in diabetic rats fed barley was reduced to normal levels. Similar results in diabetic rats were reported by Li et al. (2003a). Narain et al. (1992), from India, studied metabolic responses to barley in healthy human subjects. Chapatis made from barley flour were consumed in a quantity to provide 40% of the total daily cereal intake. After four weeks, the incremental area under the 3-hour glucose curve decreased from 107.9 mg/dL to 91.5 mg/dL. Battilana et al. (2001) investigated the mechanism of action of β -glucan in postprandial glucose metabolism in healthy men. These researchers concluded that the lowered glycaemic response following a meal containing β -glucan is related to delay and/or decreased absorption of glucose due to increased viscosity in the gut. Following these early studies on barley as an agent for modulation of blood glucose, together with recognition of the GI, there was heightened interest in the development of products containing barley, especially due to the growing incidence of diabetes¹².

THE ROLE OF MICRONUTRIENTS OF YAVA (BARLEY) IN DIABETIC HEALTH

Niacin:-Niacin (nicotinamide) may help to preserve residual B-cell function in individuals with type 1 or type 2 Diabetes.

This B-vitamin is believed to be one of the components of the glucose tolerance factor (GTF).

Vitamin E:-Low levels of vitamin E are associated with increased incidences of diabetes. Research suggests that individuals with diabetes mellitus have decreased levels of antioxidants. Increased antioxidant requirements may be a result of increased free radical production during periods of hyperglycaemia.

Vitamin B6:-Research shows that a deficiency of vitamin B6 may result in abnormal glucose tolerance, degeneration of the pancreatic beta cells, reduced insulin response to glucose and reduced serum and pancreatic insulin levels. In addition, vitamin B6 deficiency has been associated with polyneuropathies.

Calcium:-Studies have shown that individuals with a low intake of calcium have an increased risk of non-insulin dependent diabetes mellitus. Numerous studies have also revealed that diabetes may be associated with abnormal regulation of intracellular calcium.

Zinc:-This mineral has been associated with over 200 enzymatic functions in the body. Increased fasting blood glucose levels have been associated with low zinc. Zinc has been shown to be important in the synthesis, storage and secretion of insulin. Increased urinary zinc excretion has also been associated with diabetic individuals.

DISCUSSION

Yava is having *kashaya rasa, ruksha guna* which reduces the excess *Kleda* from body by its *shoshana* effect. The diabetic patient-shave increased appetite, due to its *guru guna*, it reduces the excess appetite. So that patient's intake will be reduced. *Lekhana guna* of *yava* makes *medo dhatu vilayana*, which helps in reducing *medodusti*, so it is beneficial in obesity. *Yavais pureeshavardhakai*.e. increased

bulk of faces, which helps in proper doshanulomana. In *prameha* all the dhatus will be in *shithilavastha*, *yava* reduces the *dhatushaithilaya*.

Recent recommendations for the dietary management of diabetes mellitus state that diet needs to be individualized so that there is improved glucose and lipid control in the patients. In majority of individuals with diabetes, this is best done with a diet that is low in fat and high in carbohydrate particularly that of cereal origin. Most of the cereal products however tend to have high glycemic index but some cereals like barley, oat etc are exception for this.

Compared to other cereals barley contains more dietary fibres that too the soluble fibre beta glucon. When this soluble fibre is taken with a meal increases the viscosity of meal bolus once it has reached the small intestine, where the absorption of nutrients occurs. This high viscosity delays the absorption. Due to delay in the absorption there will be no sudden fluctuations of blood sugar.

CONCLUSION

1. Disease specific dietary measures are the unique concept of *Ayurveda*. *Yava* is one of the important *pathya ahara* in *prameha* because of *kashaya rasa* and *ruksha guna*, the excess *kleda* of the body is reduced.
2. *Yava* can be a good supplier of protein, fibres and micronutrients in diet
3. Consumption of *Yava* foods have been shown in clinical trials to lower blood glucose
4. Curves, even over several hours and to influence glucose metabolism at the following meal.
5. The Soluble fibre β -glucan in barley that is effective in lowering blood cholesterol, also affect glycemic responses.

REFERENCES

1. Yadavaji Trikamji Acarya, editor, Charak samhita of Acharya Agnivesha, Cakrapanidatta, Commentator, Chaukhamba Sanskrit Sansthan, Varanasi, 2009. Sutra sthana 25/45
2. Yadavaji Trikamji Acarya, editor, Charak samhita of Acharya Agnivesha, Cakrapanidatta, Commentator, Chaukhamba Sanskrit Sansthan, Varanasi, 2009. Sutra sthana 25/45
3. Rosemary K. Newman and C. Walter Newman, Barley for Food and Health: Science, Technology, and Products, 2008
4. Yadavaji Trikamji Acarya, editor, Charak samhita of Acharya Agnivesha, Cakrapanidatta, Commentator, Chaukhamba Sanskrit Sansthan, Varanasi, 2009. Chikitsa stana 6/18-24
5. Yadavaji Trikamji Acarya, editor, Charak samhita of Acharya Agnivesha, Chakrapanidutta, Commentator, Chaukhamba Sanskrit Sansthan, Varanasi, 2009. Chikitsa stana 6/18-24
6. Yadavaji Trikamji Acarya, editor, Charak samhita of Acharya Agnivesha, Chakrapanidutta, Commentator, Chaukhamba Sanskrit Sansthan, Varanasi, 2009. Chikitsa stana 6/18-24
7. Yadavaji Trikamji Acarya, editor, Sushruta samhita, Dalhana Commentator, Chaukhamba Sanskrit Sansthan, Varanasi, 2009. Chikitsa stana 11/6
8. Bhisagacharya Harishastri Vaidhya, Vagbhata, Ashtang Hridaya, Sarvangasundara and Ayurveda Ramayana Commentary of Arunadatta and Hemadri. Chaukhamba Sanskrit Sansthan, Varanasi, 2010. Chikitsa stana 12/10.
9. Bhisagacharya Harishastri Vaidhya, Vagbhata, Ashtang Hridaya. Sarvangasundara and Ayurveda Ramayana Commentary of Arunadatta and Hemadri, Chaukhamba Sanskrit Sansthan, Varanasi, 2010. Chikitsa stana 12/14.
10. Bhisagacharya Harishastri Vaidhya, Vagbhata, Ashtang Hridaya. Sarvangasundara and Ayurveda Ramayana Commentary of Arunadatta and Hemadri, Chaukhamba Sanskrit Sansthan, Varanasi; 2010. Chikitsa stana 12/15
11. Rosemary K. Newman and C. Walter Newman, Barley for Food and Health: Science, Technology, and Products, 2008 page: 184
12. Rosemary K. Newman and C. Walter Newman, Barley for Food and Health: Science, Technology, and Products, 2008 page: 185-186.

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