An Analytical Review of Acharya Charaka’s Perspective of Diet in Pramehi W.S.R. to Honey, Semidigested Foods, and Aged Grains

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ABSTRACT

Introduction: Acharya did mention the aushadha for the vyadhī but never skipped the ahara-vihara leading to the pathogenesis and necessary for healthy state. The importance of plants consumed in the form of ahara is highlighted by Acharya themselves at each step while explaining the etiopathogenesis of any disorder along with their cures.

Objective: There is an urgent need to revalidate the concepts listed by Acharya by the parameters of the present era to facilitate their usage without any hindrances. Portrayal of concept of ahara-vidhana in Prameha, as given in Charaka Samhita, seems impractical and to enlighten the hidden reasons behind such special and contradictory diet concepts.

Materials and methods: Charaka Samhita and available commentaries were explored for the analytical review of the references and in-depth understanding of the various ahara mentioned in the context of diabetes. Further exploration, interaction, and interpretation of traditional knowledge in the light of contemporary core sciences and biomedical sciences.

Results and conclusion: Honey in diabetes mellitus (DM) seems to be contrary to the running trends, but compared with sucrose and glucose, because of its lower glycemic index and production of significant higher level of c-peptide, it may be used as sugar substitute in diabetic patients. Grain aging brings changes in the water absorption properties. The starch granules forming the major part of the endosperm of the grain can be damaged causing change in starch functionality and oxidation of components, including fatty acids and proteins. The concept of semidigested food seems to be scientifically rational.

Clinical significance: The present integrative review strengthens the concepts of Acharya that seem impractical in the present era. The sound base of the evidences paves way for the clinical implementation of the concepts in the patients of Prameha with confidence.

Keywords: Diabetes mellitus, Glucose metabolism, Honey and diabetes mellitus, Insulin, Medicinal plants research, Prameha.


Source of support: Nil
Conflict of interest: None

INTRODUCTION

Present day tech-savvy generation loaded with lifestyle disorders is getting conscious about their health and its maintenance too. Emphasis is given on dietetic aspect by every individual and everyone is alert about eating and eating right, but still the lack of awareness is an evil needed to be fought. With the intermixing of the cultures, adaptation, and imitation of their habits, new diets and recipes are introduced in the society. Though a lot of factors influence the state of the health of an individual, still dietary disturbances play a key role. Diet includes plants and each and every dravya (substance) is aushadha (medicine) according to Acharya Charaka.

Prameha—A metabolic syndrome diagnosed mainly by the sign and symptoms related to the urine. Metabolic—referring specially to breakdown of food and its transformation to energy. Hence, Prameha is directly related to dietetics and is a disorder of its disturbances. Specificity of the ahara varga (diets) mentioned in nidana (etiopathogenesis) of Prameha draws the conclusion that they are stated after keen observations on significant number patients. Diabetes—a Greek word meaning “passing through,” a general term for diseases marked by excessive urination; likewise, “prabhuta avila mutrata”1—said by Acharya Sushruta in Prameha makes way for their side-by-side study.

India retains its position of diabetic capital of the world. World Health Organization data state that in year 2000, 171 million people were suffering from diabetes, i.e., 2.8% of the population, among which, India topped the world with the highest number of diabetics (31.7 million). Global prevalence of diabetes among adults
(aged 20–79 years) by 2010 was estimated to be 6.4%, affecting 285 million adults. The age group affected mostly falls under the category of working breadwinners of the family, hence, diabetes not merely affects the health of the population but adversely affects the economy and growth of the nation. Given the disease is now highly visible across all sections of the society within India, there is now the demand for urgent research and intervention—at regional and national levels—to try to mitigate the potentially catastrophic increase in diabetes that is predicted for the upcoming years.

Prameha, mentioned as a syndrome in Ayurveda, is a cluster of metabolic disorders. A group of 20 disorders categorized into three broad groups according to the predominant dosha is defined precisely in sutras that need to be elaborated and studied extensively to understand the mentioned principles and achieve the goal of “svasthasya svasthya rakshanam” and “atarasya vihara prashamana.”

The aghara vihara mentioned in context of nidana and chikitsa (treatment) of Prameha are eye raising. In spite of the imbalanced insulin functions and hence, restriction of carbs and sugars, Acharya Charaka prescribed medicines containing madhu (honey). The restriction of Navina anma and emphasis on the use of purana dhanya needs to be analyzed extensively. It is assumed that grain aging should result in certain changes that alters the biochemical changes it undergoes in the human body. The concept of semidigested foods, i.e., feeding barley to animals like horses, etc., and collecting it from their feces, and then giving its preparations to the patients, needs to be understood well.

The present work focused mainly on the specific dietary items, i.e., honey, aged grains, and semidigested barley, which are mentioned by Acharya Charaka as effective pathya in Prameha, but the perception among masses is different and they are reluctant to accept the same. Hence, there was an urgent need to understand the reasons behind such distinct prescription in the light of modern day researches.

MATERIALS AND METHODS

Charaka Samhita and available commentaries were explored for the analytical and critical review of the references and in-depth understanding of the concept of diets mentioned in context of Prameha. Previous works done in the related field were studied and inferences were drawn to explain the concepts mentioned by Acharya Charaka. Attempts were made to find answers in other sciences to support the concepts.

RESULTS AND DISCUSSION

Acharya Charaka, in the context of treatment of Prameha, has mentioned medicinal preparations containing honey as an ingredient or as sahapana (to be taken along with the medicine) for the medicine. Honey is sweet and rich in sugars; hence, it should be contraindicated in the management of DM. But, on the contrary, a lot of evidences are found in various researches that support the fact that honey can be prescribed in diabetic patients. It is observed that anti-diabetic drugs in combination with honey scavenge the reactive oxygen species, ameliorate oxidative stress, and reduce hyperglycemia. Honey supplementation in diabetic rats ameliorates renal oxidative stress independent of the dose; its hypoglycemic effect is dose-dependent. In addition, honey supplementation ameliorates several metabolic derangements commonly observed in diabetes. It reduces the levels of glycosylated hemoglobin, increases high-density lipoprotein, and reduces level of hepatic transaminases and triglycerides. Honey administration increased serum levels of insulin, while it reduced serum concentrations of glucose and fructosamine in diabetic rats. Administration of glibenclamide or metformin drugs in combination with honey resulted in much lower glycem is levels. When each of these drugs in combination with honey was administered, there was a significant reduction in serum fructosamine, creatinine, bilirubin, triglycerides, and very low-density lipoprotein cholesterol in the diabetic rats. Unlike honey, these antidiabetic drugs produced no effect on serum fructosamine concentrations when administered alone. Combining antidiabetic drugs with honey also enhanced antioxidant defenses and reduced oxidative damage in the kidney and pancreas of diabetic rats. Oxidative stress leads to β-cell dysfunction, which leads to the inability of pancreatic β-cells to secrete sufficient insulin to recompense for insulin resistance. Acharya Charaka advised to feed barley to animals, like horses, etc., and then to collect it from their feces, and give its preparations to the patient. Whole barley is found to have 52.5% digestibility, and 48.2% of the barley kernels recovered in feces. The cell wall of barley consists of cellulose together with tightly bound arabinoxylan. Arabinoxylan-rich fiber appears to act as a rapidly fermentable, soluble fiber. When soluble fiber is fermented, short-chain fatty acids (SCFAs) are produced. In numerous physiological processes, SCFAs are involved, promoting health, stabilize blood glucose levels by acting on pancreatic insulin release and liver control of glycogen breakdown, stimulate gene expression of glucose transporters in the intestinal mucosa, regulating glucose absorption, suppress cholesterol synthesis by the liver, and reduce blood levels of low-density lipoprotein cholesterol and triglycerides responsible for atherosclerosis. Overall, SCFAs affect major regulatory systems, such as blood glucose and lipid levels, the colonic environment, and intestinal immune functions.
Natural resistant starch consumption by humans is found to have the following results: Decreased glycemic response in healthy individuals, decreased glycemic response in diabetics, and increased insulin sensitivity in healthy individuals, individuals with type II diabetes as well as insulin-resistant individuals.\(^2\,^1\,^2\) One study found a 50% increase in insulin sensitivity in overweight men consuming 15 gm of resistant starch/day for 4 weeks.

Anna dravya is advised to be taken in purana (aged for more than an year after harvesting) condition by the Acharya in almost every situation and Nareina anna (freshly harvested grains) is prohibited or mentioned in the nidana (etiological factor) of various diseases. This principle of purana dhanya consumption has something to do with the changes that occur in the grains on storage after harvest (grain aging). According to the thesis “The storage of grain & ageing of flour & their effect on flour functionality” submitted to Oregon State University by Omar Miranda-Garcia in the year 2013, water and sucrose’s solvent retention capacity (SRC) shows small but significant increase across storage period of 24 weeks, increase in water and sucrose SRC, and decrease in carbonate SRC after storage and overall decline in lactic acid SRC, which may indicate a decline in gluten performance over a period of 6 months. Works with intact cereal seeds indicate that as seeds age, their ability to metabolize glucose into CO\(_2\), polysaccharides, and proteins decreases. There was rapid decline in percentage utilization of glucose into CO\(_2\) and ethanol insoluble material by whole seed.\(^2\,^3\)

Pathya and Apathya diet in Prameha patient as per Acharya Charaka is tabulated in Table 1.

### Table 1: Pathya/Apathya as prescribed by Acharya Charaka

<table>
<thead>
<tr>
<th>Pathya (Do's)</th>
<th>Apathya (Don'ts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viskhira, Prattuda, Jangala Mansaras (quail, rooster, partridge, woodpecker, cuckoo, etc.)</td>
<td>Gramya-Anopa-Udaka Mansara (mutton, pork, fish, prawn, etc.)</td>
</tr>
<tr>
<td>Yava (barley)</td>
<td>Dadhi (curd), milk, and milk products</td>
</tr>
<tr>
<td>Purana Shali Shashitika</td>
<td>Freshly harvested grains</td>
</tr>
<tr>
<td>Trina Dhanya (Sava, Kanguni)</td>
<td>Sugandhaka-Hayanaka-Mahavrihi (types of rice), Yavaka</td>
</tr>
<tr>
<td>Sarshapa Tail (mustard oil)</td>
<td>Freshly harvested Harenu (pea), Masha (black gram) with ghrita</td>
</tr>
<tr>
<td>Mudga (green gram)</td>
<td>Pishtanna (food prepared from flour), Shaka (vegetables)</td>
</tr>
</tbody>
</table>

CONCLUSION

The present study proved the relevance of diets prescribed by Acharya Charaka in present era and its benefits with special reference to concept of ahaara-vidhana in Prameha. The study also enlightened the reasons behind special and contradictory diet concepts like prescription of medicines with honey in Prameha, which seems to be contrary to the running trends. Honey as an adjunct to antidiabetic drugs is found to ameliorate cellular oxidative stress and improves metabolic derangements and glycemlc control.

Concept of semidigested food (grains collected from the feces of the animals like horses, etc.) seems to be scientifically rational. The low digestibility of the barley accounts for its availability in the feces of the animals like horses, etc., and the changes in the cell wall of the barley after passing the gut of the animals account for the decreased glycemic response and increased insulin sensitivity.

Though any direct relation of grain aging and its effect on diabetes could not be found, increase in water and sucrose SRC, decrease in carbonate SRC after storage, and overall decline in lactic acid SRC indicate a decline in gluten performance that needs to be further studied to find some link between the grain aging and its healthy effects on diabetics as there are several references demonstrating a link between the two. Food supplementation with gluten-containing foods before age 3 months, however, was associated with significantly increased islet autoantibody risk (adjusted hazard ratio, 4.0; 95% confidence interval, 1.4–11.5; p = 0.01 vs children who received only breast milk until age 3 months).\(^2\,^4\) Rapid decline in metabolization of glucose into polysaccharides and proteins over storage indicates the conversion of glucose present in the fresh grain and hence, decline in its conversion rate due to utilization of present glucose.

The diets mentioned in the texts though seem eye raising but on reviewing the concepts stated by the Acharya in the light of modern researches, it is evident that the diets listed are rational and scientific in all aspects. It is required to broaden the horizons of understanding the concepts rather than questioning them, as the principles are listed by Acharya after a lot of research and keen observations.

CLINICAL SIGNIFICANCE

The potential of Ayurvedic philosophy and medicine needs to be recognized and converted into real-life treatment paradigm. The sound base of the evidences paves way for the clinical implementation of the concepts in the patients of Prameha with confidence.

This literary review serves as a conceptual interface between Ayurveda and modern science. The approach of Ayurveda is science based and pramana vigyana is the ancient concept of evidence base. The principles documented in the text are tested through thorough research and then stipulated. There is a lot of scope of research.
in Ayurveda to revive it, but it needs its own research design to test and validate its fundamental concepts as well as its treatments. The references used in the present work are not the direct researches done to validate the principles stated here, but this review is suggestive of the need of such researches to strengthen the principles stated by the Acharya.

REFERENCES


हिंदी सारांश

आचार्य चर्का का प्रमेय रोग में आहार विषयक विश्लेषणात्मक विवेचन, विशेषरूप संयुक्त, अर्थपूर्ण आहार एवं पुरुष धार्म के संदर्भ में।

'कोनिका गेरा, सैनिकेश्वर सिद्दीकी, कुलदेव के. थिमान

आचार्य चर्का का प्रमेय रोग में आहार विषयक विश्लेषणात्मक विवेचन, विशेषरूप संयुक्त, अर्थपूर्ण आहार एवं पुरुष धार्म के संदर्भ में।

अनुसार जगत में विवेचन व प्रासंगिकता के अर्थ संयुक्त, विशेषरूप संयुक्त, अर्थपूर्ण आहार एवं पुरुष धार्म के संदर्भ में अर्थपूर्ण परिवर्तन दृष्टिगत हो रहे हैं। आज के युग में संक्षिप्तियों के बिना होने के कारण नीतीश आहार एवं ज्यांजल समाज में देखने को मिल रहे हैं जिसके कारण खान-पीन की आदतों में भारी बदलाव हो रहे हैं। यह व्यक्ति के दोषों की निर्देशन का प्रभाव होता है एवं आहार का नियंत्रण एक महत्वपूर्ण भूमिका निभाता है। वर्तमान समय में आहार संबंधी पहलुओं पर अवलोकन ध्यान दिया जा रहा है एवं लोक खान-पीन के संबंध में सारख है तथा न्याय प्रक्रिया की कमी से कुराई से लड़ने की आवश्यकता आज भी है।

प्रस्तुत पर्य रचना में प्रमेय संदर्भ में विवेचन आहार-विवेचन का विवेचन कर आधार द्वारा निर्णय आहार के आज के परिवर्तन व प्रासंगिकता को प्राप्त करना एवं विवेचन तथा विशेषरूप आहार अवधारणाओं की पीछे संभागित विषयों का संकलन करना परम प्राप्त रहा।

प्रमेय के विवेचन में उल्लेखित आहार की अवधारणा का नहीं रहा समय, विशेषरूप संयुक्त, अर्थपूर्ण आहार एवं उल्लेखनीय संबंध हो रहा चर्का संवर्तित की उल्लेख दीक्षाओं एवं संदर्भों का अन्य साधन किया गया। इसी विवेचन में किए गए अन्य शोध कार्यों का अनुवर्तन चर्का संवर्तित की उल्लेख दीक्षाओं एवं संदर्भों का अन्य साधन किया गया। अनुवर्तन के विवेचन के विवेचन में हुए शोध का अनुप्रयोग कर आज के परिवर्तन में आधार विवेचन का विवेचन विषयों को समझने का प्रयास किया गया।

आधुनिक परिस्थितियों में एक जैसे जैसे शहद को रजोज्यों एवं व्यक्तियों की तुलना में दृष्टि के स्तर में प्रयोग किया जाता है यथावतः शहद का glycemic index कम होता है एवं अधिक मात्रा में c–peptide की उच्चता करने के कारण यह प्रमेय के रूप में नामांकन है। कृतिकारायण एवं oxidative तनाव एवं hyperglycemia कम करने की शक्ति व्यक्ति में साधन आज। शहद के प्रयोग के परिपालन से hepatic transaminases, triglycerides एवं glycosylated hemoglobin (HbA1c) की मात्रा में कमी एवं HDL cholesterol की मात्रा में वृद्धि होने के तथा प्रयोग का हुआ।

अन्य के पुरुष रूप में ही पुरुषों के निहित के पुरुष हैं और तत्व साधन आज। अन्य के पुरुषों के प्रयोग में उसके वर्ग अत्यंत पतन करने के प्रभाव में अर्थपूर्ण परिवर्तन दृष्टिकोण होता है। क्षति के परिवर्तन से पक्ष का एवं sucrose की solvent retention capacity में वृद्धि एवं carbonate एवं lactic acid की एक से कमी तथा glut energy performance की में कमी आने के तथा प्रयोग का हुआ। यह एक का अन्य करने के प्रकाश यह निश्चित किया जाता है कि नीतीश अन्य प्रमेय क्रांति है एवं उसका निहित दृष्टिकोण है।

यद्यपि अन्य का प्रासंगिक प्रयोगों को मण्डल करना कर उसकी विवेचन से अमर्क अन्य एकाधिक कर प्रमेय को मण्डल करना निन्दा पूर्वक: वैज्ञानिक प्रतिक्रिया होता है। यद्यपि अन्य पूर्वक: पालक न होने के कारण विवेचन में प्रभाव किया जा सकता है।

अन्य का अन्य से गुजर कर यह की कृतिकारों की निष्ठा में जो परिवर्तन होते हैं वह इसके glycemic response के कारण होते हैं एवं insulin sensitivity के बदल के कारण होते हैं।

प्रत्यय आधिक अने से संभात के प्रयोग में विवेचन में पुरुष मूल अर्थवृत्ति आहार द्वारा कारण की तारतम्य का प्रबंधन होता है। युग के परिवर्तन पर प्रभाव भी आधार द्वारा विवेचन किया की पूर्वक: आचार्य अनुसार विवेचन को मण्डल के प्रयोग कस्तो पुरातन: होना यह हिद्रत करता है कि आधार के द्वारा लिखित तब एवं देखने के जब एंसो उत्तर दृष्टि विवेचन का अर्थ होने पर ही विवेचन की कृतिकायों को प्राप्त किया जा सकता है।