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 ahara. 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.


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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, “prabhlata acila mutrata”—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
Acharya the imbalanced insulin functions and hence, restriction of carbs and sugars, affecting 285 million adults. The age group affected (aged 20–79 years) by 2010 was estimated to be 6.4%, and the imbalanced insulin functions and hence, restriction of carbs and sugars, affecting 285 million adults. The age group affected (aged 20–79 years) by 2010 was estimated to be 6.4%.

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 antidiabetic 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 glycemic 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. Combination of 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 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.
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>Vishkira, Pratuda, Jangala Mansaras (quail, rooster, partridge, woodpecker, cuckoo, etc.)</td>
<td>Gramya-Anoopa-Udaka Mansaras (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</td>
<td>Freshly harvested grains</td>
</tr>
<tr>
<td>Shashthika</td>
<td>Sugandhaka-Hayanaka-Mahavrihi (types of rice), Yavaka</td>
</tr>
<tr>
<td>Trina Dhanya (Sava, Kanguni)</td>
<td>Freshly harvested Harenu (pea), Masha (black gram) with ghrita</td>
</tr>
<tr>
<td>Sarshapa Tail (mustard oil)</td>
<td>Pishtanna (food prepared from flour), Shaka (vegetables)</td>
</tr>
</tbody>
</table>

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. 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 Navina 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 carbonated 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 CO2, polysaccharides, and proteins decreases. There was rapid decline in percentage utilization of glucose into CO2 and ethanol insoluble material by whole seed. \(^{23}\)

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

**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 ahara-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 glycemic 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 carbonated 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). \(^{24}\) 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.

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हिंदी सारांश
आचार्य चक्रवर्ती का प्रमेय सेंचुरियन में आचार्य विषयक विश्लेषणात्मक विवेचन,
विशेषरूप समू, अंतर्निहित आधार एवं पुरुष धार्मिक संदर्भ में।

'कोनिका गेहः, मनीलोकर लिपठी, बलदेव के. धीमान
आधुनिक जगत में विकास व प्रगति के अवलोकन मुद्य की डीमिक्चरों एवं स्वास्थ्य के रूप में अध्यायिक परिवर्तन दृष्टिगत हो रहे हैं। आज के गुप्त में संस्कृतियाँ के मिलने होने के कारण नीतिन आधार एवं योजना समाज में देखने को मिल रहे हैं जिसमें कारण खाना-पनन की आदतों में भारी बदलाव हो रहे हैं। वह व्यक्ति के दोषों की स्थिति को प्रभावित करता है एवं आधार का नियामकरण एक महानयुतृ भूमिका निभाता है। वर्तमान समय में आधार संबंधी पहलुओं पर अध्यायिक ध्यान दिया जा रहा है एवं हमें लोग खाना-पनन के विषय में सहम रहे हैं परन्तु जाबवक्ता की कमी से हुई इसे लड़ने की आवश्यकता आज भी है।
प्रत्येक पत्र करें विशेष रूप से प्रति आधार-विश्लेषण का विवेचन कर आधार द्वारा निर्धारित आधार की आज के परिवर्तन में प्रभावित करनें एवं विवेचन तथा विशेष विवेचनात्मक आधार अनुकरणों के पैच्छी सहायता दिशाओं का संकलन करना अपने उदयर रहें।
प्रति के विषय में उल्लेखित आधार की उपस्थिति की गहराई समाज, विशेषरूप समूह में महानयुतृ संबंधी होता है। कारण संहिता की उल्लब्ध दीक्षाओं एवं संदर्भ का अध्ययन किया गया। इसी क्षेत्र में यह अब शोध कार्य का अध्ययन करने विशेष रूप से अभियंताओं को समझने हेतु किया गया। अन्य परिवर्तनों एवं आधुनिक विवेचन के क्षेत्र में हुए शोध का अध्ययन कर आज के परिवर्तन में आधार विवेचन करते हैं।
अध्ययन में देख ज्ञात कि सुम्भव होगा रूप में शहद का ग्लिकोज़ीमिक इकेड संबंधी होता है एवं अधिक मात्रा में इसी के c–peptide की प्रभावित करने के कारण यह प्रति के रूप में महानयुत है। इससे प्रतिक्रियायोगी आल्टोज़न, oxidative तनाव व hyperglycemia कम करने की शक्ति तथ्यों में समान है। शहद के प्रयोग के परिणामस्वरूप hepatic transaminases, triglycerides व glycosylated hemoglobin (HbA1c) के मात्रा नीचे होने का तथ्य प्रदर्शन करता है।
अन्य के पुराण रूप में ही पुरुष प्रयोग करने के निर्देश की पुलिट हेतु अनके तथ्य समाने आए। अन्य के पुराण होने की प्रक्रिया में उनका जल अवशेषण करने की क्रिया में अध्यायिक परिवर्तन दृष्टिकोणों होते हैं। कारण के परिणाम से जल व sucrose की solvent retention capacity में नीचे एवं carbonate व lactic acid की SRC में कमी तथा ग्ल्यूटेन performance की में कमी होने के तथ्य प्रदर्शन करता है। इन रब का अध्ययन करने के परमाण में निरंतर न किया जा सकता है कि नीतिन अन्य प्रमेय कारक है एवं उसका निवेश दृष्टिकोण है।
यहाँ अन्य का आचार्य प्रयोगों को माध्यम करना व उनकी विवेचन में अभिव्यक्त अन्य एकता कर प्रभावों को माध्यम करने का एक भूमिका पूर्ण: वैज्ञानिक प्रतीत होता है। यहाँ अन्य पुरुषक प्रताधिक न होने में कारण विवेचन से पाए किया जा सकता है।
अलंक में अन्य से गुजर कर यह के की उत्साहों की निति में जो परिवर्तन होते हैं वह इसके विपणिक response के कम होने एवं insulin sensitivity से करने का कारण होते हैं।
प्रत्येक अन्य के विषय में विवेचन में पुरुष अत्यन्त विवेचनात्मक आधार रूपों की काल्पना का प्रशासन होता है। यह से प्रति परिवर्तन के पुरुष भी आधारवर्ती विवेचन की पुलिट आधुनिक विवेचन के माध्यमों द्वारा पुरुषत होता है। वह यह सिद्ध करता है कि आधारवर्ती व विवेचनात्मक तत्त्व में देखने के व्यापर उसके सृजन द्रुत विवेचन कर आपस होने पर ही विवेचन की उमाइदों को प्रभावित किया जा सकता है।