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Lactose intolerance: an ayurvedic perspective-a conceptual study

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ABSTRACT

Ayurveda appears to have had a different view of food and its function in maintaining good health and curing diseases, even before the dawn of mainstream clinical research. Ayurveda believes that healthy eating is the basis of success and well-being, whereas unnatural nutrition is the basis of all maladies. In Ayurveda-sector, food is known as rasayana, vibrant, etc. Milk is also regarded as a complete-food by modern medical science. Lactose intolerance is a condition that limits the feeding of milk in humans. After infancy, like further creatures, most humans mislay the extracellular enzyme-lactase over time and it also offers us the opportunity to digest lactose, milk's principal sugar. Hypolactasia infects more than 70% of the planet's population, many times it goes unreported and generates mortality. Ayurvedic description of the In Mahodadhi Astyamita Dugdha, a historical treatise on dietary habits, addresses lactose intolerance. Milk-sensitivity therapy can actually be found in ancient books such as the Charakasamhita, where its disease was not addressed as a result of individuals, but can be seen scattered over and over again. The aim of this paper is to introduce the idea of lactose intolerance with Ayurvedic treatment options.

Keywords: Ayurveda, Charak Samhita, Dugdha Asatmyata, Hypolactasia, Mahodadhi.

INTRODUCTION

Ayurveda means "science of life" in Sanskrit. Its prime objective is to maintain the health of someone who is otherwise healthy. Ayurveda describes three upastambhas (supporting pillars) for a healthy life, the first of which is aahara (food) [1]. The importance of diet can be recognized from Charaka's declaration that healthy food is the basis of health, whereas unhealthy All problems can be connected back and eat. Food, according to Sushrut, is the foundation of Oja, Bala, Prana, Varna, and. Acharya Charak has declared unequivocally that Aahar should be that which sustains a person's health. Milk is the first food that humans consume. Milk is referred to in Ayurveda as Rasayan (rejuvenator), Jeevaniya (vitaliser), Aajanma Satmya, and so on. Milk is the best of Jeevaniya Dravya, according to Charak. Milk is nearly a complete food, according to modern Science. Providing appropriate levels of vital nutrients (excluding iron) for maintain life. Milk is an excellent foundation of protein, fat, calcium, and a variety of other nutrients [1]. Sulphur, magnesium, manganese, iodine, zinc, and other minerals are included in milk in addition to calcium. It also contains riboflavin, vitamin B 12, vitamin A, and vitamin K. Milk doesn't enclose niacin, but it does contain tryptophan, an amino acid that can be converted to niacin. Iron and vitamin C are both scarce in this food [1]. Lactose, which is made up of galactose and glucose, is the most common sugar found in milk. There is no other meal that contains free galactose or glucose. It promotes growth and development, as well as calcium absorption. Milk has a little quantity of glucose and other carbohydrates in it. The state of Dugdha-Asatmyata, which is linked to lactose intolerance, occurs when milk is not effectively absorbed. The patient is deprived of a variety of nutrients as a result of this illness. Aadhman, which includes Aatopa, Ruja, and AadhmatUdar, is a symptom of DugdhaAsatmyata (Infidelity signs and symptoms). These symptoms are similar to borborygmi, stomach pain/cramps, and abdominal distention [2]. Lactose intolerance is characterised by the presence of these proteins. Flatulence, diarrhoea, or vomiting is some of the other symptoms of lactose intolerance. These symptoms are not classified as Aadhman in Ayurveda, however according to Sushrut, the prodromal signs of diarrhoea include some Aadhman characteristics. Ayurvedic texts such as Charaka Samhita and Sushruta Samhita, as well as current literature, are also critically.

Intolerance to Lactose

Lactose intolerance is a phrase used to describe clinical symptoms caused by the use of lactose. Lactose-intolerance is a disorder in Individuals who suffer from symptoms caused by a lessened capability to digestlactose, a white-sugar or brown-sugar create in cream-milk [3]. The amount of lactose that

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individuals with the condition must tolerate before they suffer symptoms varies. Signs include intestinal cramps, bloating, diarrhea, gas and nausea. These sensations usually develop half to 2 hours later, after ingestion coffee or drinking-milk and cheese. The brutality of the illness is governed by how much a person drinks. It does not have any harmful effect on the gastrointestinal process [4].

Pathophysiology

Lactosedigestion is faster as glucose digestion, and dissolution has long been measured a lactose absorption rate-limiting step [5]. The metabolism of lactose into glucose occurs mostly and on intestine's microfinance sector membrane cell membrane. Lactose that is not immersed by the small intestine travels quickly into the colon due to the intraluminal disaccharide osmolality Lactose is metabolised by the bacterial flora in the stomach to short-chain, fatty-acids and gas, culminating in acetate, propionate, and frothy [6]. The intestinal mucosa absorbs the short chain fatty acids, which allows malabsorbed lactose to be salvaged for energy usage. This is how galactose is salvaged there in newborn colon, and how an individual with minimum-digestive-lactase-activity compensates to lactoseingestion. This alcoholic fermentation development, which not only helps preserve nutritionally essential carbo-hydrate but also serve as a foundation for the galactose breath hydrogen test, provides the cornerstone for the lactose mean plasma test [7].

Lactose intolerance manifests itself in a wide range of clinical signs. Individual vulnerability to intestinal obstruction resulting from the osmotic-load of hydrolyzed galactose in the greater trifling intestine, the speed of intestinal-transit [8]. and certainly, the colon's responsiveness to a carbohydrates load are all important components. The greater the tendency to keep food out of the stomach and the higher the fat intake of lactose-containing food, the gentler the digestive acid secretion and the fewer-symptoms produced by sugar. Lactose-intolerance can occur as a result of a natural decrease in lactase expression or as a result of the secondary consequences of a range of mucosal disorders.

Primary Reduction

A primary reduction in lactase activity is related with three clinical phenotypes:

- Developmental Lactose intolerance Deficiency: This is characterized by reduced intestinal synthesis and secretion identified before 32 months of pregnancy in premature neonates [1].
- HCLD (Human Congenital Lactase Deficiency): This is a very common disorder. It's completely recessive, which means there really is no functioning lactase enzyme. This ailment has only been recognized in a few distinct communities [1].
- Lactase Activity Declining after 5 Years: Gluten intolerance affects most of the world's population, with lactase activities falling by age 5, with low lactase levels continuing after that. Low lactase levels in people older than 5 years are more common among Asian, African, and indigenous populations [2].

Secondary Lactase Insufficiency

Mucosal damage is the cause of secondary lactase insufficiency. Infectious diarrhea (rotavirus is the most frequent cause), immunocompromised individuals (giardiasis), gluten intolerance, tropical-sprue, radioactivity intestinal obstruction, druginduced intestinal obstruction, and Crohn's-disease are all conditions that can destroy the epithelial or flat villus [9]. Huh. Lactase deficiency can be assessed using a lactose intolerance assay in a biopsy specimen, although lactose intolerance levels can vary between samples, making it difficult to diagnose lactase insufficiency with just a lactase assay in a clinical specimen [2].

Clinical Characteristics

i. Pain in the abdomen (may be periumbilical or lower quadrant).
ii. Cramps or constipation.
iii. A feeling of nausea.
iv. Constipation.
v. Vomiting or diarrhoea.
vi. Borborygmi.

Different people appear to have varying degrees of sensitivity to lactose intake, as well as varying degrees of stomach distention and complaints. When lactose is consumed, it causes an influx of water into the small intestinal lumen, as well as the generation of gas, which causes colon distention. Individuals with a higher tolerance report fewer symptoms. As a result, sunjective factors play a crucial role in lactose intolerance clinical symptoms [2].

Dugdha Asatmyata

In Ayurveda, Dugdh Asatmyata is the manifestation of lactose intolerance. The condition Dugdh Asatmyata is mentioned in Ayurved Mahodadhi (Sushen Nighantu). Other Ayurvedic texts do not provide a precise explanation of Dugdh Asatmyata, but Acharya-Charak has asserted emphatically that each sickness cannot be named everytime [10]. To the supporters Acharya Charaka advised that every infection could be described using the Ayurveda's essential philosophies. As a result, a surgeon should endeavour to understand the type of the illness (Dosha), the location of indicator, and the etio-logical variables before starting treatment. Aadhman is a symptom of Dugdh Asatmyata in Ayurved Mahodadhi, according to Ayurved Mahodadhi (Sushen Nighantu). So, by examining Aadhman in Ayurvedic classics, Samprapti (pathogenesis) of Dugdh Asatmyata can be comprehended [11].

Charak Samhita

Since Adhamana is not referred to as a separate entity in the Charaka-Samhita, the phrase has been explored in various contexts in Table 1 [12].

Table 1: The Localities of Charak-Samhita-Aadhman were seen in This Table

Sr. No.	Reference
1.	C. S. Su. 7/8
2.	C. S. Su. 7/12
3.	C. S. Su. 26/43

4.	C.S. Chi. 13/18
5.	C.S. Chi. 13/21
6.	C.S. Chi.13/41
7.	C.S. Chi.14/11
8.	C.S. Chi.15/63
9.	C.S. Chi.22/15

Sushrutsamhita

In the Sushruta Samhita, Adhaman is treated as both a symptom and a separate entity. The diagnosis is characterized by location, adhaman, when the abdomen is severely dilated with a rumbling sound and intense pain due to the congestion of vata [13]. In chapter Vaman-Virechan Vyapad Chikitsa Adhyaya of the ChikitsaSthan, Acharya Sushrut describes In this situation, the adhaman should be expected to be treated with really hot pastes, injections, appetizers, and enemas, while he has remnants of gastric contents, abundant integumentary system, disparity, and intestines almost with vata is filled. It causes pretentiousness, which either grounds coagulation of urine, heaviness in the abdomen and excruciating pain in the patient [14]. Aparpanna, hand-baked, fruit (suppository), digestive biscuit, appetizer and suppository should be used to cure depression; After this, langhana (creating lightness in the body), food items digested from grains should actually be consumed at lunch time [15]. (Coriandrum sativum), Jiraka (Cuminum cyminum), and other foods that stimulate-digestive-fire given in Table 2 below.

Table 2: This Table Shows the Places of Charak Samhita Aadhman

Sr. No.	Reference
1.	S.S. Su. 12/34
2.	S.S. Su. 33/7
3.	S.S. Chi. 2/16
4.	S.S. Chi. 14/12
5.	S.S. Chi. 24.62
6.	S.S. Chi. 34/3
7.	S.S. Chi. 36/19
8.	S.S. Chi. 36/22
9.	S.S. Ka. 3/36

Bhel Samhita

In bhel samhita Adhman is declared as ailment initiated due to vaatsampraptighataka [16]. of Dugdha Asatmyata can be conditional as follows:

- Dosha-Kaphaavruta-vata.
- Dushya-Rasa-dhatu.
- Agni-Jataragni.
- SrotasMahasrotas.

Chikitsa Siddhanta of Dugdhaasatmyata

According to Acharya Sushruta, what should be the treatment plan for the diseased disease? (This is a disease that is not mentioned in the classics.) No sickness can emerge without the vitiation of Doshas, according to Acharya Sushrut [17]. As a result, the therapy of Anukta Vyadhi (an illness not documented in classical texts) should be based on the causal Dosha [18]. Based on the foregoing information, the involved Doshas appear to be Kaphaavritt Vaat. The most important Dosha elaborate in the indicator of Aadhman is Vaat. Aavrana (obstruction) and Dhatu-Kshaya (emaciation) are the only two causes that can vitiate Vaat. Milk consumption cannot be a cause of Dhatu Kshaya (emaciation) in the case of Dugdha Aasatmyata [19]. According to Ayurveda, Dugdha aggravates Kapha. Thus, in the instance of Dugdha Aasatmyata, the disease is caused by Aavarana (obstruction) of Vaat by Kapha. The therapy of Kaphavritta Vaat was given by Acharya Charakhas (Vaat Dosha obstructed by Kapha Dosha). Drugs and food items that pacify Kapha and and force the Vaat back to its normal course, according to Acharya Charak, should be employed [20].

Ayurveda Mahodadhi's Treatment for Dugdhaasatmyata

Ayurveda In the instance of Dugdha Asatmyata, Mahodadhi recommended using Nagar (Zingiber officinale Rosc.) and Pippali (Piper longum Linn.). The process is as follows: add half the amount of liquid to the milk, add nagara and pippali to the milk and boil the milk until no more milk remains [21]. Due to its bitter (pungent) rasa (taste) and ushnaguna (hot in quality), nagara improves kapha and vata dosha and promotes pitta dosha. Nagara includes Dipan (appetizer), Pachan (digestion), Rochana (desire to eat and taste), Grahi (anti-diarrhoea), and Shoolprashaman (analgesic). All of these traits and behaviours demonstrate its utility in Dugdha Asatmyata. Pippaliin Sushka (dry) stage alleviates Vaat because to Katu (pungent) Rasa (taste) and Madhuravipaka (impure in wealth) and Snigdhaguna (impure in wealth) (sweet after bio-transformation). Because Kapha is Vata shamaka (reduces both Kapha and Vata), Deepana (appetizer), Pachana (digestive), and Shoolprashaman Karma, Pippali is beneficial in the condition of Dugdha asatmyata (analgesic action). As a result, the heterozygosity pathogenesis chain is disrupted by both treatments [22].

LITERATURE REVIEW

The Researcher illustrates M. Morin *et al* [23]. The major carbohydrate found in milk is lactose. It is an essential source of strength for children. Dairy products are the primary source of vitamins and minerals in adults. Lactase is essential for lactose digestion. In adolescence, however, some individuals develop lactose deficiency. In a large proportion of the human population, this deficiency is genetically encoded, and can lead to malabsorption. Food intolerance is a condition in which dispersion causes and is proven to cause stomach problems. Lactose intolerance is usually described by reducing or eliminating food containing lactose. However, this can lead to dietary disagreements, which can be health hazards. Adapting the use of lactose to a tolerance level can help keep dairy products on the plate. In that scenario, in an effort to reduce the likelihood of nutritional disabilities, one should examine not only by quantity but also other ingredients that may positively attenuate or encourage. In addition, preserving a small amount of galactose has some positive effect on the microflora as well as increasing lactose resistance.

M. DI Costanzo *et al* [24]. Lactose intolerance is a condition that is characterized by a variety of ailments triggered by the consumption of lactose-containing products. When lactase activity in the small intestines intestinal mucosa is lowered, it causes one of the most prevalent food type's intolerance. Food intolerance can range from mild to severe, due to the intensity of the symptoms. When lactose is not processed, the gut bacteria produces lactic acid it, causing galactose intolerance indications such as digestive problems, bloating, gas, and diarrheic, with substantial interindividual and producing better quality variations in the degree underlying clinical symptoms. These gastrointestinal complaints may be incorrectly labeled as "milk allergy" complaints because they are related to cow's milk hay fever. Since there is a vast difference between gluten sensitivity and cow's milk allergy, increased awareness of all these distinctions can help avoid misunderstandings in the care and diagnosis of both diseases.

L. Robles *et al* [25]. According to the article, food intolerance is a clinical illness characterized by restlessness, abdominal distention, gas and constipation following lactose ingestion. Lactose is a prevalent disaccharide prevalent in dairy that must be broken down into sugar and galactose, a carbohydrate employing lactase-polarizing-hydrolase. The lack of this enzyme causes indigenous bacteria close to the bottom of the gastrointestinal system to convert lactose into a variety of gases. Recent research has concluded that the prevalence of discomfort after drinking lactose is dependent on the amount of lactose digested, lipase expression, biliary epithelium, and gastrointestinal system sensitivity. Several diagnostic procedures are currently available to investigate the molecular mechanism of gluten sensitivity, including blood, biopsy, genetic and breathe testing. Because of its lowcost, accessibility, and non-invasiveness, hydrogen-breath testing is becoming a major tool to help identify many gastroenterological conditions, including celiac disease. Additionally, there appears to be a lack of standardized protocols for conducting hydrogen-breathing tests through many researches, with much of their particular protocol being employed, which can lead to discrepancies in the interpretation of the data. New methods to accelerate and reduce the cost of hydrogen-breath-testing have become an area of research with substantial breakthroughs, always thanks to technology.

DISCUSSION

Lactose intolerance is a disorder that affects starvation in the patient. And thanks to its high calcium content, milk is practically a complete diet [26]. Various treatments calcium sulfate or hydroxyapatite glaciate 20 are commonly prescribed to lactose sensitivity patients. The dairy equity idea, which was established with the support of advice contained in countless codes, enables harmless and effective operations. A person seeking the nutritional and health benefits of milk because he or she is encouraged to combine milk with prescription medicine in a unique way.

CONCLUSION

Lactose intolerance has been linked to lactose intolerance. Clinical signs of inattention included food allergies, diarrhea and flatulence. But in Ayurveda, based on the paroxysmal diagnosis of diarrhea (diarrhoea), diarrhea is not a characteristic symptom of lactation, it could have been inferred that lesser diseases of lactose intolerance are now described in Ayurveda mahodadhi under the title Dukdha asatmatya, but since the subjective Dan is important in the clinical signs of gluten sensitivity although the explanation for this may be that individuals of the Ayurveda Mahodadhi era had more sattva (the ability of the mind), which translated to fewer complaints were reported.

Conflict of Interest

None declared.

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