THERAPEUTIC BENEFITS OF TAKRA (BUTTERMILK) FOR HUMAN HEALTH

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ABSTRACT

In Ayurveda it is considered that the basis of both the health and diseases is Ahara (food). Ahara is considered as Prana (basis of life). Acharya Kashyap had clearly stated that Ahara is the best medicine. Takra (buttermilk) is one of the Aharadraya described in Ayurved with lots of medicinal properties. Use of Takra is indicated as single drug or Anupan (vehicle) or as Pathya (wholesome) in various diseases like Grahni (sprue), piles, diarrhea etc. Presence of MFGM, sphingolipids, casiens, lactoferrins, various vitamins etc. has been detected in buttermilk. These constituents somewhat explain the mechanism of action of buttermilk. In Bhavprokash Nighantu, it is clearly stated that a person who consumes Takra never suffers from any disease and where Takra (buttermilk) is used as medicine for a disease then there is never relapse of that disease. Takra is easily palatable and can be used both for prevention and treatment of diseases.

KEYWORDS: Ahara, Takr, Anupan, Pathya, Amrit.

INTRODUCTION

Food has been considered as root cause of life and vitality.[1] The wholesome and unwholesome food articles are the causative factors par excellence for growth of living beings and their disease respectively.[2] Defined in general terms, food includes all edible substance viz., as drinks, as eatables, as lickables and as linctus.

Takra is said to be Kasoy (stringent)- Madhur (sweet) in Ras (taste) along with a little bit of Amlaras (sour). Takra is Laghu (light to digest), Grahi (~ useful in diarrhea) and Agnideepak (promoter of digestion). Takra pacifies the Vaat and Kapha dosh but does not vitiate the Pittadosh. Takra is a good Sroto-shodhak (clarifies the channels of circulation)[3]. Acharya Carak has cleared that although Takra is Amla but due to its Madhurvipak, it does not vitiates the Pitta dosh. Takra pacifies the Kapha dosh due to its Kasayarasar, Usn, Vikasi and Rukhsh gun. Takra is Madhur, Amla and Sandra and due to these properties it pacifies the Vaatdosh.[5]

Modern medical science is now looking forward to Takra as it is rich in calcium, potassium and Vit B12, vitamin E and folic acid.[6] Takra is a natural probiotic diet because the friendly bacteria for the intestines and the body are found in abundance in it. Whoy proteins present in buttermilk help to increase the formation of "IgA" named antibodies. Proteins present in Takra cooperates well in absorbing the minerals as well, particularly the calcium and the iron.

Table 1: Comparison of nutritional value of buttermilk and milk[7]

<table>
<thead>
<tr>
<th>S.No</th>
<th>Constituent</th>
<th>/100gm buttermilk</th>
<th>/100gm milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Water</td>
<td>90.4gm</td>
<td>90.7gm</td>
</tr>
<tr>
<td>2</td>
<td>Protein</td>
<td>3.43gm</td>
<td>3.43gm</td>
</tr>
<tr>
<td>3</td>
<td>Fat</td>
<td>0.51gm</td>
<td>0.07gm</td>
</tr>
<tr>
<td>4</td>
<td>Cholesterol</td>
<td>4.0gm</td>
<td>3.0gm</td>
</tr>
<tr>
<td>5</td>
<td>Carbohydrates</td>
<td>4.01gm</td>
<td>4.80gm</td>
</tr>
<tr>
<td>6</td>
<td>Minerals</td>
<td>0.75gm</td>
<td>0.75gm</td>
</tr>
<tr>
<td>7</td>
<td>Vitamin B12</td>
<td>200ng</td>
<td>300ng</td>
</tr>
<tr>
<td>8</td>
<td>α-tocopherol</td>
<td>20μg</td>
<td>Traces</td>
</tr>
<tr>
<td>9</td>
<td>Folic acid</td>
<td>5μg</td>
<td>5μg</td>
</tr>
</tbody>
</table>

Comparison shows that buttermilk is almost similar in composition to skimmed milk. Thus, buttermilk can be used in conditions where milk cannot be given to patients such as lactose intolerance.

Superiority of Takra (Buttermilk) Over Dadhi (Curd)

By reviewing classics of Ayurved, it becomes clear that Takra (buttermilk) is far superior in qualities than Dadhi (curd). Although Takra is prepared from Dadhi (curd) by churning procedure. Due to churning, properties of Takra changes. Takra is Laghu (easy to digest) while Dadhi (curd) is gur (heavy to digest). Similarly Takra (buttermilk) is Madhur (sweet) in Vipak while Dadhi (curd) is Amla (sour) in Vipak. Takra pacifies all the three Doshas while Dadhi (curd) vitiates Pitta and Kaph. Takra is...
one of the best medicine for Shoth while Dadhi (curd) is the causative factor for Shoth (edema).[8,9]

From modern point of view also, properties of buttermilk varies from those of curd. Churning process destroys MFGM. Thus, buttermilk is rich in destroyed MFGM. The specific proteins, unique polar lipids and minor molecules like minerals, vitamin E, carotenoids of this membrane seem to possess additional functional properties, especially in terms of health.[10]

Therapeutic Uses of Takra (Buttermilk)

1. Jwara (Fever)

Sushrut has stated that if there is Arochak (uninterested in food) in Jwara due to Kaph, Takra should be used mixed with Vyosh.[11]

Vagbhhatt has advised use of Anamalataka (not sour in taste) as Pathya (as food material) in Jwara (fever). Food cooked with Anamal (not sour in taste) Takra is Ruchikarak (increases appetite).[12]

2. Atisar (Diarrhoea)

Carak has advised use of Takra in Atisar (diarrhoea) as Anupan (vehicle) of Laghuann (light to digest)[13]. Further Carak has advised Takra as Anupan (vehicle) for different Yogas (formulations) for Kaphaj Atisar.[14] Carak has also advised use of Takra with Chitrak (Plumbago zylenica) churn for treatment of Atisar.[15]

3. Chardi (Vomiting)

Carak has advised use of Takra as Aahardravya (food article) in management of Kaphaj Chardi.[17]

4. Respiratory Disorders

Carak has advised use of Takra as Anupan (vehicle of drugs) in the management of Kaphaj Kaas (cough due to Sleshm dosh).[18]

Vagbhhatt has mentioned a special use of Takra in Swas Kaas (~ asthma and cough). According to Vagbhhatt apply thick paste of Pippali (Piper longum), Pippalimula (Piper longum), Pathya (Terminalia chebula), Vidang (Embelia ribes) and Chitrak (Plumbago zylenica) to the inner side of earthen pot of ghee (butter). When the paste gets dried fill the earthen pot with Takra and leave for a month. This Takra is said to be Agniddeepak (improves digestion) and Swas- kaasnashak (~ asthma and cough reliever).[19]

5. Aanah

Vagbhhatt has stated that use of Takra in Aanah for Vat- kaph patients is equivalent to elixir.[20]

6. Udar Rog (~ abdominal distention)

Carak has advised use of Takra in Udarrog as follows: [21] Udarrog |Takra mixed with

<table>
<thead>
<tr>
<th>Nichya Udar (Sannispatodar)</th>
<th>Trigushan (Suthi, Marich and Pippali), Kshar and Lavan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vatodar</td>
<td>Pippali (Piper longum) and Lavan</td>
</tr>
<tr>
<td>Pittodar</td>
<td>Shankara and Madhuk (Glycyrrhiza glabra)</td>
</tr>
<tr>
<td>Kaphodar</td>
<td>Yavani (Trachyspermum ammi), Saindhav, Ajaji (Cuminumcyminum) and Vyosh (Suthi, Marich and Pippali)</td>
</tr>
<tr>
<td>Pleehodar</td>
<td>Madhu, Tail, Vachaa (Acorus calamus), Suthi (Zingiber officinale), Satahva (Anethum sowa), Kusth (Saussurea lappa) and Saindhav</td>
</tr>
<tr>
<td>Jalodar</td>
<td>Vyosh (Suthi, Marich and Pippali)</td>
</tr>
<tr>
<td>Badhodar</td>
<td>Hapusha (Juniperus communis), Yavani (Trachyspermumammmi), Ajaji (Cuminum cyminum) and Saindhav</td>
</tr>
<tr>
<td>Chidrodar</td>
<td>Pippali (Piper longum) and Madhu</td>
</tr>
</tbody>
</table>

Carak has also indicated use of Takra in Udar Rog an Anupan (vehicle) of Narayan churn.[22]

7. Shawathu (oedema)

Carak has clearly indicated that if a patient of Shawathu is suffering from Aamatiasar then Takra mixed with Vyosh, Sauvarchal, and Makshik (honey) should be used for the treatment.[23]

Takra is a content of Chitrakghrit, used for the treatment of Shawathu.[24]

Vagbhhatt has advised that for treatment of Shawathusavarchal, Trikatu, and honey mixed with Takra should be used. Further Vagbhhatt has advised use of Takra as Anupan (vehicle) of Haritaki (Terminalia chebula) used with Gud (jaggery) or of Aadrak (Zingiber officinale) with Gud (jaggery).[25]

8. Gulm

Carak has advised use of Takra mixed with Yavani (Trachyspermum ammi) churn and Vidhavan as Pathya (useful) in Gulm. This Takra is Agniddeepak (improves digestion) and Vaat- Kaph- Mutraanulumak (promotes excretion of flatus and urine).[26]

Vagbhhatt has advised use of Takra as Anupan of various Ghrit and churn such as Triyushandayaghrit etc.[27] Further Vagbhhatt has advised Takra as Pathya for patients of Kaphaj Gulm.[28]

9. Arsh(piles)

Carak has used Takra in the management of Arsh on a broad level, Carak has advised use of Haritaki (Terminalia chebula) and Triphala (three myrobalans) churn with Takra.[29]

Carak has advised special formulation of Takra, namely Takararisht in the management of Arsh.[30]

Carak has clearly said that there is no better medicine than Takra for the management of Vaat- Kaphaj Arsh.[31] Carak has further advised that, all those food materials that causes Vaatanuloman (promotes excretion
of flatus) and are Agnideepak (improves digestion) should be used for Arsh patients and Takra possesses both the qualities.[32]

Vagbhhatt has advised use of Takra as Anupan of fruits of Peelu (Salvadora persica). Further Vagbhhatt has advised use of Takra mixed with Hapusha (juniperus communis), Hingu (Ferula narthex) and Chitrak (Plumbago zylenica).[33]

10. Grahn Dosh (~sprue)

Carak has described the properties of Takra in the Grahnidoschhiktasadhayy. Carak has stated that Takra is best for management of Grahn dosh due to Deepan (stomachic), Grahi and Laghu (light to digest) properties of Takra.[34] Further, Carak has stated that all types of Takra should be used extensively for the management of Grahnidosh.[35] Takra is component of various formulations mentioned for management of Grahnidosh such as Takrarisht, Panchmoolyadhyya ghrit and Churn.[36]

Sushrut has also stated that in management of Grahni, Churn of Pachniya, Sanghrahi and Deenpiyangana should be used with Anupan of Takra or only Takra is enough to treat the diseases.[37]

11. Anupan (vehicle) of various formulations

Apart from these direct therapeutic indications, Takra has also been indicated as Anupan (vehicle) for various formulations in Ayurved. Anupan is any liquid with which medicine is taken orally or which is drink after taking medicine[38]. Anupan (vehicle) helps in quick assimilation and distribution of drug in body.[39] Various formulations whose Anupan is Takra are Triuruttadikalk, Laghugangadhar churn, Narayan churn, Navayasloha, Mandurvatak etc.[40]

DISCUSSION

Buttermilk has been underestimated for many years. For a long time, modern medical science has regarded it as an unwanted and useless by product which accumulates during the production of butter. However, the high value components of this food which are found to be beneficial to human health, are slowly changing these opinions. Currently research is mostly focusing on the functions of single compounds of buttermilk like phospholipids, MFGM (milk fat globule membrane), caseins, whey proteins etc.

Milk fat globule membrane (MFGM)

Buttermilk specificity is to be rich in destroyed MFGM, whose compactly bound constituents such as proteins, polar lipids (phospholipids and sphingolipids), minerals etc. are released during the process of churning.[41]

Effects of glycerolphospholipids on human health are very similar to those of sphingolipids: they play an important role in cell signaling and have a strong impact on the development of brain function. Especially, choline containing glycerol phospholipids can positively affect cognition by ensuring ion permeability, fluidity and the suitable environment of the dynamic membrane of the adult brain. These functions are crucial for children, ageing persons and probably for Alzheimer patients as well.[42]

Sphingolipids are important compounds of the myelin-covering which encloses and protects the axons of the nerve cells.[43] In addition, they seem to regulate the irritability and transmitter release in the nervous system.[44]

This probably explains the reason why buttermilk is said Medhya (intelligence promoting) in Kaidev Nighantu.[45]

About 120 different proteins were determined in bovine MFGM e.g. MUC1, xanthine dehydrogenase/oxidase (XD/H/XO). XD/H/XO inhibits the growth of bacteria such as Staphylococcus aureus, Escherichia coli and Salmonella enteritis by activating the lactoperoxidase system in milk or the formation of hydrogen per oxide.[46]

This may be the reason why buttermilk has been so widely indicated in Ayurved in various diseases of G.I.T and respiratory tract diseases that are infectious in nature as per modern medical science.

Caseins in buttermilk

The protein contents of buttermilk, with a percentage of 3.2% corresponds approximately to the content of skim milk. Caseins cover 77-81% of all the existing proteins in buttermilk. Effects of caseins on human health are: increase of amino acid oxidation and protein synthesis, strongly inhibit proteolysis, appetite suppression, anti-hypertensive, immunomodulatory activities, anti-thrombolic, ACE-inhibitory activity.[47]

Whey proteins in buttermilk

Whey proteins include β-lactoglobulin, α-lactalbumin, immunoglobulins, proteose-peptones, serum albumin, lactoferrin etc. Primary function of these is not the nourishment but the provision of functional properties. Effects of whey proteins on human health’s are: strongly stimulate amino acid oxidation and protein synthesis, stimulate insulin secretion, decrease arterial stiffening, provide protection against intestinal, mammary and colon cancers; increases absorption of minerals, liposoluble vitamins, anti-microbial, anti-viral and immunomodulatory action.[48]

CONCLUSION

Acharya Vagbhhatt has clearly mentioned that the root cause of all diseases is Mandagni.[49] After reviewing the therapeutic effects of Takra, it is clear that Takra has a very potent effect on Mahasrotas. Takra has the potency to normalize the physiology of Mahasrotas. Takra balances all the three Doshas of the body. Acharya Carak has mentioned Takra in Agyraaushad as- persistent use of Takra is best medicine for Grahn dosh, Shoph, Arsh and Ghritvyapad (complications due to intake of butter).[50] This review shows the tendency and potential of Takra that it can positively influence human health and its contribution to balanced diet is without doubt. Bhavprakash has rightly quoted that as there is elixir for gods, Takra is for humans.[51]


37. Sushrut, Atisar Pratisedh, 40th Ch., Uttar Tantra in Sushrut Samhita (Ayurvedatatva sandipika Hindi vyakhya), Part 2, Varanasi, Chaukhambha Sanskrit Sansthan; 2013, page 263.


49. Vagbhatt, Udar Nidan 12th Ch., Nidan Sthan in Astang Hridayam (Vidyotini Teeka), Varanasi: Chaukhambha Prakashan; 2007, page 263.


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