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Abstract

Maul-Jubn (Whey) a by-product of the dairy industry is used since thousands of years as nutraceuticals in the traditional system of medicine. For several years it was thought to be insignificant and was either used as an animal feed or it was disposed off as waste. But Over the last years several studies were carried out concerning the importance of nutritional value of whey and the properties of its ingredients. It is now accepted that its main content, whey proteins, have antimicrobial, antiviral and anti-oxidant properties, can offer a kind of protection against cancer and heart diseases and assist at the enhancement of immune defence. In Unani medicine the importance of Maul-Jubn in the prevention and treatment was well known to Unani physicians since ancient time, and abundant literature regarding the use and methods of preparation have been discussed. The present study attempted to discuss the importance of Maul-Jubn in the perspective of Unani medicine with addition of some recent scientific reports.

Keywords: Maul-Jubn; Nutraceuticals, Traditional; Antimicrobial; Paneer Mayah.

Introduction

Milk provides nutrition in the form of energy from the carbohydrate present in the form of lactose, nitrogen from the protein content and a rich source of calcium to build bones and is the only food designed for mammals by nature through evolution. Mammals have adapted to consume all other foods. Milk also provides other important benefits. For example, there are many biological activities associated with certain components in milk. Almost without exception, these biologically active components are exclusively to be found in whey or serum fraction of milk. Whey is the watery which is received during making of cheese by coagulating and separating casein proteins from milk [1]. Food and pharmaceutical industries are constantly in search of novel products with a strong nutraceuticals function using whey or whey-derived ingredients as a valuable source. The list of nutraceuticals compounds associated to whey-derived products includes vitamins, probiotic

cultures, and bioactive peptides, and the scientific evidence to support health benefits, either by prevention or treatment of some diseases, is steadily growing [2]. Presently, the various commercial methods of processing whey do not improve or even maintain the fragile immune modulating and regenerative components or the biological activity that was originally in the milk. They are all by-products obtained during the manufacturing of cheese.

Unani Scholars from ancient time paid attentions towards proper processing of Maul-Jubn and other milk products. They provided certain guidelines and important protocols to be followed while preparing Maul-Jubn in order to make the product more useful in the prevention and treatment of various diseases. Same as they provided guidelines regarding the proper use of Maul-Jubn in some diseased conditions [3,4]. Today various scientific studies have proved the importance of Maul-Jubn and validated its usefulness in health sectors.

History

The treatment of human ailments by using medicines that are obtained from animals or ultimately are derived from them is known as zoo therapy. Animal-based medicines have been elaborated from parts of the animal body, from animal metabolites (corporal secretions and excrements), or from animal products (nests and cocoons). Data have been found on such usages in ancient civilizations, such as Egypt and Mesopotamia, which left their mark on the various civilizations that later, arose in these regions. Historical sources of ancient Egypt mention the medicinal uses of animal-derived products, such as, bee honey, cattle milk, ox organs, lizard blood, bat limbs, ambergris from the sperm whale, and the glands of the musk deer. Historical scripts of civilizations of ancient Mesopotamia, mainly the Assyrian and the

Babylonian, contain descriptions of beeswax and honey, mongoose blood, turtle shell, fish oil, goat skin, bird excrement, and animal fat. In India, the Hindu religion has used five products of the cow for purification since ancient times. In ancient China, among many other substances of animal origin, the glands of the musk deer were used [5].

Hippocrates (460–377 BC) the Greek physician, the “father of medicine”, stated that the body has an inner adaptive or healing power. To strengthen this healing power, he prescribed serum (liquid whey) to his patients. It was native whey. It provided full biological activity and numerous health benefits. All commercial whey proteins available now are derived from extensively processed milk and whey and incomparable to the vitality in that 2500-year-old prescription. Hippocrates used among many other animal substances cattle milk, chicken eggs, mammal horns, and sea sponge as remedies [6]. About one-tenth of the remedies mentioned in Dioscorides (100 AD) *Materia Medica* were animal parts and products. The ancient Jewish scripts mention several animals and their medical uses: honey was used to treat bulimia and goat milk was used to cure coughing. Snakes, human urine, pearls, mammal glands, and several other substances were used for their therapeutic effects [5].

The medicine of the Prophet (Tibb al-Nabawi) indicates intensive medicinal use of milk, cattle

cheese, and bee honey. Early Arab and Muslim physicians such as Rhazes (864–930), Avicenna (980–1037), Al-Kindi (800–873), Al-Antaki (d.1599), Ibne Baitar (1197-1248) prescribed many animal-based remedies [5,7,8]. These included camel milk, cattle fat, coral, crab, dog, fish stone, horse, lizard, medical skink, mouse, pearl, pigeon, rabbit, rhino and goat horns, scorpion, snake, squid, turtle, and wolf, and animal products such as honey, wax, milk, and eggs. About 10% of all the medicinal substances used in the Arab–Islamic world during the Middle Ages were of animal origin. Most animal products, such as milk, cheese, and honey, were used in the diet for the prevention and treatment of various diseases [5].

Daud al-Antaki, who lived and practiced during the second half of the sixteenth century, mentioned in his book, *Tadhkirat Ulil-al-Bab* a number of animals and their products [9]. Accordingly, the cow cheese was used to treat scabies, to relieve burning sensations in the urinary tract, to treat kidney problems, and as an aphrodisiac. For instance, its ashes were used to treat wounds; its liquids were used to eliminate scars; whereas its boiled body was used to treat swellings, throat infections, and racing heartbeat. The stinking bug, a common parasite at that time, was used to treat headaches, uterine problems, coughing, and fever, to dissolve kidney stones, and to open blocked a urinary tract [5].

A number of Indian writers had also described the processing methods and different therapeutic uses of various animal-based products. Preferably, there are abundant literatures regarding the processing and uses of Maul-Jubn. Some important books were written and some were translated in this period which contain information about Maul-Jubn, like Bayaze Khas, Alqarabadeen, Qarabadeene Jadeed, Khazaen-ul Advia, Zakheera Sabit bin Qurrah, Qarabadeene Qadri and Tibbe Akbar etc [10-12].

Methods of Preparation

Maul-Jubn is prepared by curdling of the milk. The pregnant goat or any pregnant animal is fed with cold foods like palak (spinach), khurfa (purslane), and the animal shouldn't keep in empty stomach. When the lamb or new born is born, its milk should not be used for the purpose of curdling (Maul-Jubn) before forty days. After then the specific quantity

of milk is taken and boiled it in a tin coated vessel, when it boiled well then little quantity of lemon juice or vinegar is added for curdling of milk. Then removed from the fire and allowed to cool, after then it is sieved through a thick cloth and thus the clean water is obtained and is known as “Maul-Jubn” [13].

Maul-Jubn may is commonly prepared with the milk of camel, goat and paneer Mayah. But sometimes it is also prepared with Maul-Asal, Sharab Shirin and with the milk excreted first time with addition of Sikanjabeen or Sikanjabeen and Aabe Angoor Kham.

Jalinoos stated in the chapter of “tadbeer-ul Asihha” that Maul-Jubn, because of its Jubuniyyat and Paneer Mayah, should be prepared with sikanjabeen, Maul-Asal, Sharab Shirin and with the milk excreted the first time [14].

Hakeem Akbar Arzani in his book “Qarabadeene Qadri” described that there are three methods of preparation of Maul-Jubn. It is prepared with Sikanjabeen. In this process, fresh milk is boiled in the vessel made of stone, sand or tin. If milk is 2 Ratl (816 g) then sikanjabeen will be poured 1/3rd of a Ratl (136 g). If Sikanjabeen doesn’t have the required acidity then Sirkah angoori, Aabe Nahoorah or Aabe Lemon water should be added for better result. According to recent Unani Physicians for curdling of 2 Ratl milk, 15 Misqal (67.5 g) Sikanjabeen and one Misqal (4.5 g) Sirkah is sufficient. It is prepared with Paneer Mayah. In this process milk is boiled. If milk is 2 Ratl (816 g) then 0.5 Dirham (1.75 g) Paneer Mayah is added. After dissolving it milk vessel is removed from the fire and allowed to cool, after then it is sieved

through a thick cloth and thus the clean water is obtained and is known as “Maul-Jubn”. It is prepared with Maghze Qurtum. In this process 2 Aoqiyah (64 g) Maghze Qurtum is taken and crushed properly then mixed with 2 Ratl (816 g) boiled milk. After mixing, the milk is stirred with fig wood or with branch of date tree. When the milk is curdled properly it should be removed from the fire. Then it is filtered with thick cloth after it is cooled [13].

Whey Composition

Whey is a fairly dilute product with a total solid of about 6-5%. As mentioned before the solids are basically consisted by lactose, whey protein, ash, lactic acid and fat (**Table 1**) [1,15].

Uses

Unani scholars prescribed and advised in several pathological conditions of body [3,4,12]. These conditions are summarized as:

Baraye Ishal: Maul-Jubn is the best mushil among all mushilat as it also provides nutrition with its purgative effect, Haar Amraz (Acute diseases), Saudawi Amraz (Malikholiya), Sozish, Sara (Epilepsy), Juzam (Leprosy), Daul-Feel (Filaria), Yarqan (Jaundice), Hurqat-e-Baul (Burning micturition), Hasate Gurdah wa Masanah (Renal and Vesicular Calculus), Quroohe Gurdah wa Masanah (Renal and Vesicular Ulcer in this case Namak is not added), Quroohe Khabeesah (Lupoid ulcer), Zulmatul-Aain (Weakness of eye sight), Shaiqa (Migraine), Istisqa (Ascitis), Hararate Jigar, Huzaal Kulliya (Renal atrophy), Kharish Khushk wa Tar (Dry and Wet Itching), and Jha’een (Melasma).

Table 1: Constituents of Sweet whey and Acid Whey.

S.No.	Constituents	Unit	Sweet Whey	Acid Whey
1.	Water	%	93-94	94-95
2.	Dry matter	%	93-94	94-95
3.	Lactose	%	4.5-5	3.8-4.3
4.	Lactic acid	%	traces	up to 0.8
5.	Total protein	%	0.8-1.0	0.8-1.0
6.	Whey protein	%	0.6-0.65	0.6-0.65

7.	Citric acid	%	0.1	0.1
8.	Minerals	%	0.5-0.7	0.5-0.7
9.	pH	%	6.4-6.2	5.0-4.6
10.	SH Value	%	about 4	20-25

Table 2: Biological activities and potential health benefits of whey protein consumption.

Protein	Biological activity
Whole whey protein	Prevention of cancer (e.g., breast and intestinal cancer), Increment of glutathione levels Increase of tumour cell vulnerability, HIV treatment, Antimicrobial activities, increment of satiety response, Increment in plasma amino acids, cholecystokinin, and glucagon-like peptide
B-Lactoglobulin	Transporter of retinol, palmitate, vitamin D, cholesterol, fatty acids, and triglycerides, Protection during passage through the stomach Conditions, Development and transfer of passive immunity, Regulation of mammary gland metabolism, Anticarcinogenic activity, Immunomodulatory activity
A-Lactalbumin	Anticarcinogenic activity, Lactose synthesis, Treatment of chronic stress-induced disease
Bovine serum albumin	Synthesis of lipids, Antimutagenic activity, Antioxidant activity, Anticarcinogenic activity
Immunoglobulins	Immunomodulatory activity, Growth and development, Disease protection through passive immunity, Antibacterial activity, Antifungal activity, Opioid activity, HIV treatment
Lactoferrin	Antimicrobial activity, Antifungal activity, Antiviral activity, Antithrombotic activity, Immunomodulatory activity, Antiproliferative activity
Lactoperoxidase	Antimicrobial activity, Antifungal activity, Immunomodulatory activity

Mizaj (Temperament): cool and moist [16].

Muzir: It causes obesity in the people with temperament of Haar and Yabis (Hot and Dry) [12]. It favours obstruction and stone formation [16].

Musleh: podeenah (*Mentha arvensis*) [16].

Badal: Haleelah (*Terminalia chebula*) and Shahitrah (*Fumaria parviflora*) (infusion) [16].

Miqdare Khoorak (Dose): 14 tola 2 masha (170 g) - 18 tola 10.5 masha (226.5 g), According to Diasqoreedoos 20 tola 10 masha (250 g) - 85 tola (1020 g) (in divided doses) [12].

It is taken as Luke warm, in three divided doses. It is necessary for the patient to walk at least 100 feet after taking each dose. It is better to use Maul-Jubn in spring

season as mushil drugs are not prescribed in extreme hot and cold season. Diet is only taken after 4-5 h of taking Maul-Jubn [13].

Precautions/Restrictions: While taking Whey, milk products, Mughallizat (Inspissant to semen), Mubakkhirat (Flatulant), Halwah (Sweet), Acids and physical and mental activities like sex, exercise are avoided completely [13].

Some Important Activities of Whey

Shabana et al have conducted research on Whey and it was concluded that the protein components of the whey include lactoferrin, beta-lacto-globulin, alpha-lactalbumin, glycol-macropptide, and immunoglobulin. Whey has the ability to act as an antioxidant, antihypertensive, antitumor, hypolipidemic, antiviral, antibacterial and chelating

agent. The aim of this research was to scientifically establish the multifaceted usefulness of this dairy industry effluent. Whey from cow milk was subjected to physicochemical characterization which revealed the presence of 89% protein, 46% carbohydrate, and high concentration of chloride, sodium and potassium ions and negligible fat. Therefore, whey is an ideal probiotic health drink. Whey showed antimicrobial potential against gram positive *Staphylococcus aureus* ATCC 6358p and gram-negative *E. Coli* NCIM 2065. Whey along with agar as a solidifying agent was used as basal growth medium for bacteria and fungi (**Table 2**) [17-18].

Conclusion

With the above-mentioned descriptions, it is quite evident that Maul-Jubn has been in use since thousands of years in the traditional system of medicine. The analysis of its compositions shows that it has nutritional properties along with some important medicinal activities. It is capable of maintaining health, prevention of diseases and also useful in curing certain diseases. Due to some misbelief it was considered as a waste for a long period of time but recent scientific studies not only validated its usefulness which was mentioned in classical Unani text but also added some latest information, to make it more useful as prophylactic and therapeutic agent.

Conflict of Interest

None declared.

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References

1. Tsakali E, Petrotos K, Allessandro A D, et al. A review on whey composition and the methods used for its utilization for food and pharmaceutical products. 6th International Conference on Simulation and Modelling in the Food and Bio-Industry FOODSIM., CIMO Research Centre, Braganca, Portugal 2010.
2. Ramos OL, Pereira RN, Teixeira JA, et al. Whey and Whey Powders: Production and Uses. *The Encyclopaedia of Food Health* 2016; 5: 498-505.
3. Kabiruddin M. Al Qarabadeen. 2nd edition. New Delhi: CCRUM; 2006: 1014-1017.
4. Khan HS. Bayaze khas Al m'arroof Ilajul Amraz. New Delhi: Ejaz Publishing House; 2006: 67-70.
5. Saad B, Said O. Greco-Arab and Islamic Herbal Medicine. John Wiley & Sons. New Jersey; 2011: 114-118.
6. Sosna L. Whey Protein Facts and Applications by Dr. Lawrence Sosna. 2006: 1-3 9 <http://www.wellwisdom.com/whey-protein-nutrition-facts-dr-lawrence-sosna/>.
7. Sina I. Al-Qanoon fit Tib (Urdu Trans: Ghulam Hasnain Kantoori). 2nd edition. New Delhi: Idara Kitab-us-shifa. 2007; 5: 379-380.
8. Baitar I. Al-Jameul Mufradat al-Advia wa al-Aghziya (Urdu Trans: CCRUM). New Delhi: CCRUM; 1999; 4: 291-294.
9. Antaki D. Tazkiratu Uoolil Albab. New Delhi: CCRUM 2008; 1: 545
10. Hafeez A. Qarabadeene Jadeed. Delhi: CCRUM 2005: 157.
11. Arzani MA. Tibbe Akbar. Deoband: Faisal Publications 31.
12. Ghani N. Khazainul advia. New Delhi: Idara Kitab-us-Shifa. 2010: 1204.
13. Arzani MA. Qarabadeene Qadri (Urdu Trans: CCRUM). New Delhi: CCRUM 2009: 107-113.
14. Qurrah SB. Zakheera Sabit bin Qurrah (Urdu Trans: Ali A). Aligarh: Muslim University Press; 1987: 442-448.
15. www.dairyforall.com (Accessed on 20 June 2017).
16. Almaghribi I. Kitabul Fatah Fittadawi min jamee'e Sunoofil Amraze Wasshakawi (UrduTrans: Abdul Bari). New Delhi: NCPC Printers 2007: 88-89.
17. Khan S, Amin N, Ansari Z, et al. Whey: Waste to Health and Wealth. *Int J Curr Microbiol Appl Sci* 2015; 2: 245-253.
18. Hernandez-Ledesma B, Ramos M, Gómez-Ruiz, JA. Bioactive components of ovine and caprine cheese whey. *Small Rumin Res* 2011; 101: 196-204.
19. Madureira AR, Tavares T, Gomes AMP, et al. Invited review: physiological properties of bioactive peptides obtained from whey proteins. *J Dairy Sci* 2010; 93: 437-455.

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