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CRITICAL REVIEW ON PANCHAMRITHA – THE MAGICAL COMBINATION WHICH MODIFIES LIFE

Sneha M S[1], Rekha. R[2]

[1]PhD Scholar, Department of Dravyaguna Vijnana, Parul Institute of Ayurveda, Vadodara, Gujrat, India
[2]Junior Research Fellow, Astangam Ayurveda Chikitsalayam & Vidyapeedham, Vavanoor, Kootanad, Palakkad, Kerala, India

Corresponding Author: snehagiriprasad@gmail.com

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ABSTRACT

Panchamritha is a combination of five ingredients which are *Goksheera* (cow's milk), *Dadhi* from *Goksheera* (curd from cow's milk), *Goghrita* (cow's ghee), *Kshoudra* (honey) and *Sarkara* (sugar). *Panchamritha* improves immunity and physical strength. *Panchamritha* is considered as *Rasayana* because all the five ingredients will support each other to reach the target area of the body, proper absorption and assimilation. It helps to support brain functions like intelligence, memory, grasping power and creative abilities. *Panchamritha* is a rare combination *of Vedas* which have both religious and health benefits. It is a combination of five nutraceutical products as ingredients that will support each other to reach the target area of the body, proper absorption and assimilation. This traditional combination is having almost all the proteins, vitamins, micro and macro elements and it helps in the development and functioning of the body. This article highlights and correlates the scientific evidence for the nutraceutical value of *Panchamritha.*

Keywords: *Panchamritha, Ksheera, Gogritha, Dadhi, Madhu, Sarkara*

INTRODUCTION

Ayurveda is a healthcare system of medicine that prioritise *Svasthyarakshana* (maintenance of the healthy state of body and mind) than *Aaturavikaara Prasamana* (treating a disease). The concept of *Vayasthapana* (anti-ageing) is described in Ayurveda as '*Rasaayana*', which aims at maintaining excellent physical and mental health in adult age. The word '*Rasaayana'* means clearing the *Srotas* for the natural flow of matter and energy. *Rasaayana* aims to improve the body's mechanism of repair and detoxification thereby maintaining better immunity, circulation, musculoskeletal strength and other psychophysiological wellness (*Prasannaatmendriya and mana*)

Five substances like *godughdha, dadhi, gritha, madhu* and *sarkara* are in the specific ratio is called *panchamritha*. According to Hindu mythology, the gods gained immortality by drinking *Panchamrita. Panchamruta* – derived from '*Pancha'* + *'Amruta'*Each of the ingredients has symbolic significance. Milk – piousness and purity, Curd – prosperity and progeny, Honey – unity and sweet speech, Sugar – bliss, Ghee – victory and knowledge [1]. All religious Hindu rituals are incomplete without the *Panchamrita (Panchamrita Prasada*). It is used as an offering during poojas *(bhoga prasada).* It is used as a libation during *Abhisheka (panchamrith aabhisheka).*

MATERIALS AND METHODS

Compilation and tabulation were done from classical text, nighantus, internet publications and journals

***GODUGDHA* (Cow's milk)**

Godugdha is having *Madhura Rasa* (sweet taste*)* and *Vipaka, Sita Virya,* (cold potency) *Snigdha*(unctuousness) and *Guru Guna (heaviness quality).* It alleviates *Vata-Pitta*and *Raktha.Bhavaprakasha* says that the regular intake of *Dugdha* prevents all diseases and ageing [2]. *Yogaratnakara* states that dugdha possess *rasayana, Brhmana* (nourishing*), Balya (strengthening*) *a*nd *Jeevana* properties. *Godugdha* is also indicated in *JeernaJwara,* (chronic fever) *Mutrakrichra (Dysuria*)*Madatyaya, (Alcoholism*) *Raktapitta (Bleeding* disorder) *Kasa*(cough*)* and Swasa*(*breathlessness) [3]. It increases *Ojas* (vitality) from having similar properties. It acts as *Rasayana* (immunomodulator and rejuvenator) [4.]

Cow milk contains carbohydrates, protein, fat, vitamins and minerals. Vitamins like vitamin A, C, D E, B6, B9 thiamine, riboflavin, niacin, and pantothenic acid. Minerals like calcium, iron, magnesium, phosphorus, potassium, sodium, zinc etc. It also contains essential amino acids such as tryptophan, threonine, isoleucine, leucine, lysine, methionine and cysteine [5]and it contains immunoglobulins, hormones, growth factors, cytokines, nucleotides, peptides, polyamines, enzymes and other bioactive peptides. The lipids like oleic acid, conjugated linoleic acid, omega-3 fatty acids, short- and medium-chain fatty acids, vitamins, minerals and bioactive compounds help to promote health [.6]

Many studies reported that milk Proteins have effects on digestive function, anti-carcinogenic activity and act as an immune modulator. Milk proteins have numerous Amino acids which are alkaline. It supports the stomach during digestion and has the power to regulate the circulatory and central nervous systems. It also cleanses the auto-synchronous human body. Lactoferrin- helps in the regulation of iron homeostasis, develops immunity for microbial infections due to its anti-inflammatory action. Hydrolysis of Lactalbumin generates peptides that activate phagocytosis via specific receptors, thus maintaining the immunity in the body [7.]

Cow milk is a healthy nutriment because of low calories, less cholesterol and high micro-nutrients. It possesses rejuvenating and protecting properties due to this combination acting as the best vitalizers. It has a protective effect in pregnancy and is easily digestible [8,9] It helps to cure fever, pain, diabetes and weakness [10].

Table 1

Milk component	Concentration in 1 l whole milk[a]	Percent contribution of 0.5 l whole milk to reference intake[b]	Health effects
Fat	33 g/l		Energy-rich
Saturated fatty acids	19 g/l		Increase HDL, small dense LDL, and total cholesterol. Inhibition of bacteria, virus
Oleic acid	8 g/l		Prevent CHD, gives stable membranes
Lauric acid	0,8 g/l		Antiviral and antibacterial
Myrisitc acid	3,0 g/l		Increase LDL and HDL
Palmitic acid	8 g/l		Increase LDL and HDL
Linoleic acid	1,2 g/l		Omega-6 fatty acid
Alpha-linolenic acid	0,75 g/l		Omega-6 fatty acid
Protein	32 g/l	30–40%	Essential amino acids, bioactive proteins, peptides. Enhanced bioavailability
Lactose	53 g/l		
Calcium	1,1 g/l	40–50%	Bones, teeth, blood pressure, weight control
Magnesium	100 mg/l	12–16%	For the elderly, asthma treatment
Zinc	4 mg/l	18–25%	Immune function. Gene expression
Selenium	37 ug/l	30%	Cancer, allergy, CHD
Vitamin E	0,6 mg/l	2 %	Antioxidant
Vitamin A	280 ug/l	15–20%	Vision, cell differentiation
Folate	50 ug/l	6 %	DNA synthesis, cell division, amino acid
Riboflavin	1,83 mg/l	60–80%	Metabolism Prevent Ariboflavinosis
Vitamin B_{12}	4,4 ug/l	90%	Key role in folate metabolism

Milk composition and percent contribution to the daily dietary reference intakes of some nutrients in 0.5 l whole milk, and their main health effects.[11]

***DADHI* (Cow's curd)**

Cow curd is *Madhura-Amla Rasa* with *Kashaya anurasa*, *Snigdha* and *Guruguna*, *Ushna Virya (Hot* potency*)*, *Amla Vipaka*, *Balavardhaka*, *Vatanashaka*, (alleviate vata) and *Ruchikaraka*. It is *Agnideepaka* (digestive) *Shukravardhaka*, *Snehana*, *Grahi (*Constipated*)*, *Balavardhaka*, *Medovardhaka (excess* fat tissue*)* *mamsavardhana (*excess muscle tissue*)*, *Mangalakari (Auspicious)* and used in *Aruchi (Anorexia*) Mutrakruchha, *Pratisyaya (*Rhinitis*)*, *Sheetakajwara*, *Vishamajwara*, *Kasa*, &*Karshya (*Lean*)*. [12,13]

Table 2: Nutritional value of Curd [14]

Content of curd	Nutritional value
Total Fat	3.1 g
Saturated fat	1.9 g
Cholesterol	8 mg
Total Carbohydrate	4.4 g
Protein	4.1 g
Calcium	83 mg

Dadhi rich in vitamins like B-12, riboflavin, protein, minerals like calcium, magnesium, phosphorous, iodine, Zinc, and Lactic acid bacteria. Lactic acid bacteria act as a potential source of probiotics. Curd's unique fermented food matrix provides added health benefits by enhancing nutrient absorption. The fermented product, increase the bioavailability of vitamin B-12, calcium, magnesium, protein and peptides. It is suitable for children and elder people which helps in skeletal muscle mass. [15].

Bacteria act as a source of probiotics, which helps maintain the microbial equilibrium in the gastrointestinal tract. The curd increases the absorption of nutrients and reduces gastrointestinal perturbation.[15]

***GOGHRITA* (Cow's Ghee)**

Goghritha is included in *Madhura Skandha* by Astanga Hridaya [16]. The Properties of *Ghritha* is *Madhura Rasa* and *Vipaka, Sita Virya* and *Guru, Snigdha Guna*. It is having the *Prabhava* as *Agnideepana*. It is *Rasayana, Chakshusya (Improve* vision*), Tridoshashamaka (Alleviate* tridosha*) Vishanashaka (Anti* poisonous*), Alakshmeehara (Auspicious*), *Papanashaka, Alpabhisyandi, Kanthivardhaka (good* for skin*), Ojovardhaka, Lavanyakaraka, Smritikaram (Increase* memory*), Medakaram, Ayushyam, (Longevity) Balakaram, Rakshoghna (Protection*) *Vayasthapana, Mangalyakaraka, Rochan* etc. *Goghritha* is considered the best among *Ghrith*as by legends of Ayurveda [17,18].

It is useful in *Kushtha, Vranashodhana* (cleanses wound), *Vranasandhana* and *Vranaropana* (heals wound quickly). Acharya Vaghabhata describes the same as Acharya Shushruta [19]. Cow ghee is best amongst all *Sneha*. It has thousand good qualities and does a thousand actions when processed properly.[20]. It is included as one of those ingredients that can be consumed daily [21].

Ghee is fat processed by methods like the fermentation of cream, butter or milk and even heating processes. It is shelf-stable due to its low moisture content and the presence of natural antioxidants. Ghee is considered superior among other fat due to its short-chain fatty acids which are responsible for its better digestibility and anti-cancer properties.

Ghee is a carrier for fat-soluble vitamins (A, D, E, K) and essential fatty acids, apart from having rich and pleasant sensory properties. The flavouring contents of ghee are carbonyls, lactones and free fatty acids and it also possesses antioxidant activity

Medium-chain fatty acids (MCFAs) are absorbed directly by the liver and burned to provide energy. The energy formed from medium-chain fatty acids is responsible for burning other fats in the system and losing weight. Ghee exclusively contains butyric acid; a short-chain fatty acid, which contributes to its distinct flavour and easy digestion. Beneficial intestinal bacteria convert fibre into butyric acid and then use that for energy and intestinal wall support.[22]

Table 3: Gross composition of Ghee [23].

Constituents	Cow milk ghee
Fat (%)	99 – 99.5
Moisture (%)	<0.5
Carotene(mg/g)	3.2-7.4
Vitamin A(IU/g)	19-34
Cholesterol (mg/100g)	302 – 362
Tocopherol(mg/g)	26 – 48
Free fatty acid (%)	2.8

Table 4: Fatty acid composition of Ghee [24]

Fatty Acid (%)	Cow milk fat
Butyric	3.2
Caproic	2.1
Capric	2.6
Lauric	2.8
Myristic	11.9
Palmitic	30.6
Stearic	10.1
Oleic	27.4
Linoleic	1.5
Linolenic	0.6

***MADHU* (HONEY)**

Madhu (Honey) Is A Semisolid Substance with *Madhura Rasa* and *Kashaya anurasa*, *Ruksha* (dryness), *Vishada* (clearness), *Sukshma Guna* (subtleness), *Sita Virya* and *Madhur aVipaka*. It Possess *Chakshusya, Deepana, Grahi, Lekhan a*(scraping), *Vrana-shodhana-ropanam, Rochana, swiryam, Saukumaryam*(tenderness), *Srotovishodhana* (Clear srotas), *Hladana* (pleasant), *Vrishya* (aphrodiasic) and *Prasadana* properties. The Indications for honey are *Kushta* (Skin disorder), *Arsha* (piles) *Kasa (Cough*) *Rakthapitta*, *Kaphajavikara (Alleviate* Kaphajavikara), *Prameha (diabetis* Mellitus), *Klama* (Fatigue), *Krimiroga* (worm infestations), *Medoroga*, *Trishna*, *Chardiroga (Vomiting*), *Swasa*, *Hikka* (Hiccough), *Atisara* (Anti diarrheoal), *Vibandha* (constipation) *Dahahara (*Reduce burning sensation), *Kshatahara*, and *Kshayahara* [25]. As per Kaiyadeva Nighantu honey possess *Medhya and vilepana* properties. it aggravates *Vata* but a suitable time for conception of *Madhu* is *Varsha Ritu* (Rainy season) [26.]

About 5500 years ago ancients' people have realised the importance of honey [27.] They used honey for daily diet and medicinal purposes [27,28]. The honey possesses antioxidant, antimicrobial, anti-inflammatory, antiproliferative, anticancer, and anti-metastatic properties. Flavonoids and polyphenols are the two antioxidants responsible for their antianti-ageing action. Honey intercept free radicals' molecules which are responsible for cell damage. Both enzymatic and non-enzymatic substances apply in protective antioxidants [29]. Slow absorption leads to the production of short-chain fatty acid produced by slow absorption [30]. It is a likely mechanism that the ingestion of honey may result in SCFA production. The immunomodulatory actions of SCFA have been confirmed [31]. Therefore, honey may induce an immune response through these fermentable sugars [35]. A sugar, nigerooligosaccharides, present in honey has been observed to have immunopotentiating effects. [30] Immunomodulatory activity of honey due to non-sugar content [30]. Honey is of natural nutraceutical product which acts as an antioxidant [33]. Honey has an action on the central nervous system which act as anxiolytic, antidepressant, anticonvulsant, and antinociceptive effects. Several studies on honey propose that honey polyphenols have nootropic and neuroprotective properties [34].

Table 5: Carbohydrate and water percentage in Honey [36,37,38]

Carbohydrate Components	Percentage
Fructose	38.2%
Glucose	31.3%
Maltose	7.1%
Sucrose	1.3%
Water	17.2%
Higher sugars	1.5%
Ash	0.2%
Other/undetermined	3.2%

Nutritional value per 100 g (3.5 oz)	
Energy	1,272 kJ (304 kcal)
Carbohydrates	82.4 g
Sugars	82.12 g
Dietary fibre	0.2 g
Fat	0 g
Protein	0.3 g
Vitamins[39]	**Quantity**
Riboflavin (B2)	0.01-0.02mg

Niacin (B3)	0.1-0.2 mg
Pantothenic acid (B5)	0.02-0.11 mg
Vitamin B6	0.024 mg
Folate (B9)	2 µg
Vitamin C	0.5 mg
Ascorbic acid	2.2-2.5 mg
Thiamine	0-0.01 mg
Minerals[39]	**Quantity**
Calcium	3-31 mg
Iron	0.3-4.0 mg
Magnesium	0.7- 13.0 mg
Phosphorus	2 - 15 mg
Potassium	40-3500 mg
Sodium	1.6 - 17 mg
Zinc	0.05-2.0 mg
Copper	0.02-0.60 mg
Manganese	0.02-2.0 mg

Honey has antioxidants, phenolic acids, flavonoids, ascorbic acid, organic acids, amino acids, and proteins [40]. Honey characterization helps us to understand its antioxidant characteristics, thereby, its use as a natural foodstuff, i.e., as a source of antioxidant human nutrition.

***SARKARA* (JAGGERY SUGAR)**

Jaggery is non-centrifugal sugar (NCS) obtained by evaporation of water in sugarcane. Sugarcane crop is cultivated for the production of sugar, but the processing of sugarcane yields various valuable products such as brown sugar, molasses, syrup, and jaggery, along with sugar (table sugar) [41,42]. It is *Shukravardhaka* (aphrodisiac), used in treating *Kshata-Ksheena* (injured patients and emaciated people) [43]. *Gudasharkara* is more *sheeta* (coolant), sweeter, *Vrushya*, useful in *Raktapitta (*bleeding disorders) and *Trishna* (relieves thirst) [44].

It consists of novel O-glycoside, dehydroconiferyl alcohol-9'-O-β-D-glucopyranoside along with the already reported isoorientin-7, 3'-Odimethyl ether was isolated as antibacterial compounds from sugarcane molasses. Scientific studies proved that it possesses anti-inflammatory, analgesic, antihyperglycemic, antihypercholesterolemic, antithrombotic, diuretic and hepatoprotective effects [45].

The colour of jaggery varies from golden brown to dark brown and it constitutes of 50% sucrose, 20% invert sugar, 20% moisture, and the remainder is insoluble matter such as ash, and protein. It contains minerals like calcium magnesium: potassium phosphorus, sodium iron manganese, zinc, copper, and chloride. Vitamins like vitamin A, B1, B2, B5, B6 C, E1: and protein. Gur is another form that is high calorie, and it contains minerals, protein, glucose, and fructose The high-quality Gur has 70% sucrose, less than 10% of fructose and glucose and 5% minerals. and it contains ferrous during its preparation in iron vessels.[46].

INGREDIENTS OF *PANCHAMRITHA* [47]

Milk: 1cup
Thick curd or yoghurt: ½ cup
Sugar; ¼ cup
Ghee: ¼ spoon
Honey: 3-4 drops

Panchamritha is the combination of the above 5 ingredients with a specified quantity. *Panchamrutha* is also called food for God *(Amrut/Amrit*) because it is having a lot of health benefits. It is given throughout the pregnancy for the good health of the mother and the proper development of the foetus. *Panchamritha* prepared with the right proportion is also considered a healthy recipe for brain function. *Panchamrutha*

nourishes the skin and keeps it moist healthy. It works as good food for healthy hair. It also Boosts physical strength, improves potency (increases *Shukra* in the body) improves immunity, vitalizes the brain, enhances intelligence, memory, grasping power, creative abilities, improves complexion as it's considered as a skin cleanser.[47]

DISCUSSION

Panchamritha, a combination of five ingredients in different proportions is a divine mixture with numerous health benefits. The 5 ingredients are in unequal quantity especially the *Ghrita* and *Madhu*. Because *Ghritha* and *Madhu* in equal quantity are considered as *Matravirudha* by Ayurveda Acharyas. All the ingredients in the *Panchamritha* are *Madhura rasa Pradhana, Madura Vipaka, Guru, Snigdha Gunayukta* and *Sheethaveerya Dravyas*. The *Rookshatwa* and *Sookshmatwa* of honey will break all the obstructions in the *Srotas* and help to reach the nutrients into its target area. *Dugdha* is *Ajanmasatmya* and *Ghritha* is the first member of *Madhura Skandhas*. both are having *Rasayana, Ojovridhikara, Shukravridhikara, Medhya* properties. *Dadhi* is *Agnideepaka, Ruchivardhaka, Balya* etc and it will help for proper digestion and metabolism of food. *Sarkara*/Jaggery sugar should be considered as the *Sarkara* because it is the safest item from sugarcane and has many health benefits than the bleached white sugar (white poison). So, this combination is having many health benefits such as *Medhya, Balya, Ojovridhikara, Agnideepana*, Twachya etc.

CONCLUSION

Panchamritha is considered as *Rasayana* because all the five ingredients will support each other to reach the target area of the body, proper absorption and assimilation. This combination is having almost all the proteins, vitamins, micro and macro elements. *Panchamritha* is called *Rasayana* because this combination includes all the elements for the proper development and functioning of the body.

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