



Review Article

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Therapeutic Potential of *Panchagavya*: A Review

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ABSTRACT

Background: *Panchgavya* refers to milk, ghee, curd, urine, and dung, derived from cows. In India, *Panchgavya* treatment is termed as 'Cowpathy'. Besides nutritional value, each product in *Panchgavya* has irreplaceable medicinal importance in Ayurveda and traditional Indian clinical practices. In *Panchgavya* therapy or Cowpathy, these five products are used singly or in combination with some other drugs of herbal, animal, or mineral origin for the treatment of several disorders and diseases. Aim: The present review aims to find out the therapeutic potential of *Panchgavya* from various research findings. Methodology: we compiled Several experimental and clinical studies carried out on the medicinal potential of each product of *Panchgavya*. Result: *Panchgavya* in combination or each product independently Proved their Antiepileptic, Anticancer, Immunomodulatory, nootropic, Antibacterial, Antifungal, and Anxiolytic effects. Conclusion: Cow products can be used as adjuvants in treating various disorders, it adds a vision for newer drug development approaches and discover the various possibilities to eradicate diseases.

Keywords: *Panchgavya*, Cowpathy, *Go-ghrita*, Medicinal importance, *Gomutra*.

INTRODUCTION

India is the land of traditions where we worship the Cow as a divine soul. In India, Cow is called '*Goumata*' and '*Kamdhenu*' as it is believed that she helps in accomplishing desired things. '*Panch*' means Five and '*Gavya*' means '*Gau*' or cow. So, *Panchgavya* represents the five things i, e milk, ghee, curd, urine, and dung, derived from the cow. People in ancient India used these cow products as folk medicine. Besides nutritional value, Ayurveda has recognized the medicinal potential of *Panchgavya* in clinical practice. Each cow product is used as a single therapy or in combination with other herbal or mineral drugs to treat various diseases so, the new therapy arises as '*Panchgavya* therapy' is also called 'cowpathy'. *Panchgavya* therapy is used to treat a variety of disorders like Arthritis, obesity, asthma, flu, allergies, skin disorders, wound healing, cardiovascular diseases, hepatic disorders, renal disorders, gastrointestinal tract disorders, tuberculosis, ulcer, leukoderma, leucorrhoea, chemical intoxication, other bacterial, fungal and viral infections. The therapy has also demonstrated its therapeutic potential against severe pathological conditions like cancer, AIDS, and diabetes [1]. Ancient literature of Ayurveda cites numerous medicinal importance of *Panchgavya* therapy; however, very less experimental and clinical studies were carried out for its scientific validation in the context of its efficacy, toxicity, and acceptability. So, the present review aims to compile scientific evidence to prove the medicinal potential of *Panchgavya*.

METHODOLOGY

The review of the literature was carried out in two phases, Ayurvedic and contemporary review, The classical textual reference of Ayurveda was explored to find the information related to *Panchgavya*.

The contemporary literature review was done using PubMed, Google Scholar, and hand search. All the articles available on the topic from 2000-2022 are referred for this study. Hand search refers to searching the articles from cross- reference of the articles selected for review.

Inclusion & Exclusion Criteria: Only the articles published in the English language are included in the study. Furthermore, Original research including clinical studies, observational studies, experimental studies, review articles, and book chapters are also referred to for the purpose of review. Single case reports and articles in other languages are excluded from the study.

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OBSERVATION & RESULTS

Cow Milk: Cow milk is used globally as nutritive and for its medicinal value in all age groups. According to Ayurveda, *Ksheer* is considered as '*Ajanma satmya*' [2] as every human being requires milk for their life after birth. Cow milk can be used in neonates as a substitute for breast milk. Numerous health benefits of cow's milk are mentioned in Ayurveda. Cow milk is used as *Rasayana* for prevention, health promotion, and therapeutic purposes [3]. Milk is used as *Anupana* with medicine for its better absorption and drug interaction to be performed [4]. Cow milk is used for the chemical detoxification of metallic preparations and poisonous plants to enhance its therapeutic action [5]. According to Acharya Vagbhata, cow milk increases life expectancy, nourishes the body tissues, boosts immunity, improves intelligence, relieves tiredness, Assists in peristalsis movement of the intestine, useful in severe debility and bleeding disorders. It increases breast milk in feeding mothers [6].

Cow milk contains 4.6% lactose, 4.65% fat, 0.54% minerals, 3.4% proteins, and 86% water. Cow milk proteins contain 27% b-casein, 9% casein, 36% a-casein, and 27% peptides. Milk also contains essential fatty acids and is a rich source of calcium and phosphorous. Phospholipids including cephalin, lecithin, and sphingomyelin, and vitamins including A, B2, B3, and K are also found in milk [7].

As a rich source of calcium and Phosphorous cow milk is essential for the growth of teeth and bones. It helps to improve bone density in osteoporosis [8]. As cow milk contains vitamin A, it is used to improve vision, and vitamin K in milk helps to regulate bleeding disorders. Cow milk restricts the growth of harmful gut bacteria and promotes beneficial gut flora. Milk enzymes exert anti-diarrhoeal activity [9]. Regular consumption of milk is recommended for patients suffering from Ascites, gall bladder diseases, diabetes, and hyperlipidemia. [10]. Cis-isomer of linoleic acid present in milk has demonstrated antineoplastic activity. Milk has anti-cancer activity against skin, colon, and breast cancer [11]. The antioxidant property of milk is due to the sulfur amino acid present in milk [12].

Cow Ghee: Cow ghee is also known as clarified butter. In India, there is a culprit in the use of *Ghrita* as a long-term dietary supplement because saturated fat in *ghrita* increases the risk of cardiovascular disorders, diabetes, stroke, and dyslipidemia [13]. On the contrary, studies conducted to evaluate the effect of *Ghrita* on serum lipid levels showed that regular 10% consumption of *Ghrita* in the diet altered blood lipid profiles and then did not elevate the risk factors for CVDs [14]. Ayurveda recommended the use of *ghrita* due to its enormous benefits. According to Acharya Charaka, *Ghrita* alleviates pitta and *vata* dosha and improves voice, complexion, digestive capacity, and reproductive capacity. It enhances memory and intellectual capacity [15]. *Ghrita* is also described to alleviate poisons, epilepsies, insanity, phthisis, fevers, syncope, and chronic pains occurring in the genital tracts, ears, and head [16]. It acts as *Rasayana* (immunomodulator) and provides lubrication in connective tissues of the body. Acharya Vagbhata has additionally described *Ghrita* to be beneficial for patients suffering from tumors, sinuses, ulcers, and worm diseases [17]. *Ghrita* shows the most unique effect of enhancing the properties of other herbs or substances by retaining their own qualities. Ayurveda also supports the co-administration of ghee along with other remedial

treatments. *Ghee*-based formulations are developed for targeted delivery and enhanced bioavailability of hydrophobic elements [18].

Ghee is a rich source of essential fatty acids (omega 3 and omega 9), and vitamins like A, D, E, and K [19]. *Ghee* has demonstrated various medicinal properties such as anti-inflammatory, immunostimulant, anti-asthmatic, anticholinergic activity, and antineoplastic. *Ghrita* formulations also help to treat vision enhancement, wound healing, gastrointestinal disorders, and paralysis, etc [20].

Curd: It is also called '*Dadhi*' or 'yogurt'. Curd is consumed worldwide due to its nutritional value and health benefits. However, Ayurveda recommends the consumption of curd according to the environment, climatic conditions, and health of individuals. Curd is prepared by fermenting cow milk using microorganisms like *Streptococcus thermophilus*, *Lactobacillus Acidophilus*, and *Lactobacillus bulgaricus* [21]. Curd contains several nutrients and micronutrients, including water, proteins, vitamins like A, B, D, and E; minerals like calcium, phosphorous, magnesium, zinc, etc [21]. Probiotics present in curd help to treat digestive ailments as they can resist the growth of harmful microorganisms and promote good gut flora [22]. It helps in strengthening immunity to fight against pathogens including HIV [21]. Curd also acts as a blood purifier [20]. Its antifungal activity is used to treat Dandruff from hair [21]. Daily dietary recommendation of curd prevents the risk of obesity by lowering the total cholesterol, and low-density lipoproteins [23].

Cow Urine: Cow urine or '*Gaumutra*' is a waste discharged from the cow. In Ayurveda, cow urine or its distillate shows numerous therapeutic effects. Cow urine relieves *Kaphaja* and *Vataja* disorders, those caused by *meda* (excessive adiposity), *visha* (poisoning), *krimi* (worms), *gulma* (gaseous swelling of the abdomen), skin diseases including leprosy, *Kamala* (Jaundice), *shopha* (swelling), *Agnimandya* (loss of appetite), [24] etc. *Gomutra* is used for giving *Vasti/ basti* (therapeutic enema). *Gomutra* is also used in the *Rasashastra* for purifying the *Dhatu*, *Upadhatu*, *Visha*, and other herbomineral compounds [25]. Cow urine contains 95% water, 2.5% of urea, and the rest 2.5% includes components like enzymes, hormones, salts, and minerals [26]. Various enzymes in cow urine stimulate hunger, improve digestion, and also act as an immunomodulator [27]. Clinical evaluation supported cow urine as oral supplementation relieves pain, eases defecation, and prevents itching, and bleeding of hemorrhoids [28]. Cow urine (2 ml, oral) and its distillate (2 ml, oral) proved its analgesic effect in rats of both sexes (150e200 g) using the rat tail immersion test and Diclofenac Sodium (50 mg/kg, oral) as a reference standard [29]. Cow urine shows a significant effect on wound-healing activity in Wistar albino rats [30]. Anti-microbial activity of cow urine and cow urine distillate was tested against pathogens like *Bacillus subtilis*, *Salmonella typhi*, *Klebsiella pneumonia*, and *Pseudomonas aeruginosa* [31]. Anticancer effect of cows' urine due to the free radical scavenging activity of the urine components [32].

Cow Dung: Cow dung demonstrated Antibacterial activity, it can kill malarial parasites and *Mycobacterium tuberculosis* [33]. The anti-fungal activity can be observed against Coprophilous fungi [34]. It serves as a skin tonic and is found effective in treating psoriasis and eczema. The mixtures of crushed neem leaves and cow dung help against boils and heat rashes [33, 34]. Smoke liberated from the

burning of cow dung causes eye irritation and tears, which can help with vision enhancement [35].

Panchagavya Ghrita: According to Ayurvedic classical reference all products in *Panchagavya* are recommended to be used in combination in the form of *Ghrita*. Depending upon their varying proportion the different formulations are mentioned in the classics as *Mahapangavya Ghrita*, *Swalpa-panchagavya Ghrita* and *Panchagavya ghrita*. The therapeutic potential of *Panchagavya Ghrita* is assessed through several clinical and experimental studies. The researchers have created evidence regarding the positive effect of formulation mainly on CNS. Experimental studies showed hepatoprotective, antiepileptic, antidepressant, anti-amnesia, and nootropic activities as well clinical evidence has drawn a conclusion that it has a beneficial effect on cognition [memory], computer vision syndrome, Infertility, Cancer, Psoriatic Arthritis etc. The therapeutic profile of formulation is seen as a cumulative effect of the synergism of five products [36].

Table 1: Cow derived Products and Therapeutic Action

Cow derived Products	Therapeutic Action
Cow Milk	Psychoneurological disorders, GI disorders, Bleeding disorders, Antioxidant, Anticancer, Immunomodulator, osteoporosis
Cow Ghee	<i>Unmad</i> (Schizophrenia), <i>Apasmar</i> (Epilepsy), <i>Jirna</i> , <i>Jwar</i> (Fever), <i>Murcha</i> (Gidiness) anti-inflammatory, antineoplastic, vision enhancing, wound healing, immunostimulants, anticholinergic
Curd	Fever, <i>Raktaj vyadhis</i> (blood disorders), <i>Mutrakruchhata</i> (Urinary Incontinence), GI disorders, Immunomodulator, Anticancer, blood purifier, antifungal
Cow Urine	Skin Disorders, Jaundice, Immunomodulator, Anti-haemorrhoids Anticancer, Analgesic, Anti-microbial, wound healing.,
Cow Dung	Anti-microbial, antifungal, skin & eye disorders
<i>Panchagavya Ghrita</i>	Antidepressant, antiepileptic, Anxiolytic, hepatoprotective, memory enhancer, Cancer, Infertility, Computer vision syndrome

CONCLUSION

Panchagavya has demonstrated its potential to serve humankind. It proves as the best therapy that can be applied in clinical practices as the main therapy or the adjuvant to treat many diseases. It adds the new approach to develop the formulations based on *Panchagavya* therapy to enhance its therapeutic effect and discovers the various possibilities to eradicate diseases.

Conflict of interest

There is no conflict of interest.

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