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Spectral Application of Panchagavya Ghrita from Pediatrics to Geriatrics

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ABSTRACT

In the current scenario due to evolving drug resistance of microbes/pathogens, especially the conditions like antibiotic resistance, residual toxicity, increased oxidative stress in cells and the concerns regarding harmful effects of allopathic medicines, nowadays novel and safer therapies viz., Ayurvedic, bacteriophage and others including Panchagavya therapy and nutritional immuno-modulatory approaches are gaining popularity and need special attention for their propagation as well as publicity. The traditional Ayurvedic system provides group of herbal drugs, amongst them medicated ghee is the foremost form of medicine prescribed in routine clinical practice, as ghee contains antioxidant and anti-toxic etc, properties in it. This dosage form is having its own importance as the selective extraction of active principles in lipid base is carried out. These lipophilic medicines might cross the blood-brain barrier.

Panchagavya Ghrita is an Ayurvedic medicine consisting of five components, namely, Goksheera, Goghrita, Godadhi, Gomutra, Gomaya rasa. Clinically, it has been recommended for the treatment of Apasmara, Jvara, Pandu and Kamala. These products comprise antioxidant, antibacterial, anti-carcinogenic, hepatoprotective, wound-healing and immune-stimulant properties. It has the potential to reduce the production of free radicals.

In the present paper, an attempt is made to review the Panchagavya ghrita from various classics and its clinical utility in all age groups with different dosage forms based on conditions.

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KEYWORDS: *Panchagavya ghrita, Goksheera, Goghrita, Gomutra, Godadhi Gomaya rasa, antioxidant, hepatoprotective*

INTRODUCTION

In the current scenario due to evolving drug resistance of microbes/pathogens, especially the conditions like antibiotic resistance, residual toxicity and the concerns regarding harmful effects of allopathic medicines, nowadays novel and safer therapies viz., Ayurvedic, bacteriophage and others including Panchagavya therapy and nutritional immunomodulatory approaches are gaining popularity and need special attention for their propagation as well as publicity[1].

The traditional Ayurvedic system provides group of herbal drugs, amongst them medicated ghee is the foremost form of medicine prescribed in routine clinical practice. As ghee contains antioxidant and anti-toxic etc, property in it. This dosage form is having its own importance as the selective extraction of active principles in lipid base is carried out. These lipophilic medicines might cross the blood-brain barrier showing desired effects on CNS and other systems effectively. Therefore, helps to regularize functions of the brain and in the management of manifestations of psychosomatic disorders.

Panchagavya Ghrita is an Ayurvedic medicine consisting of five components, namely, goksheera, goghrita, godadhi, gomutra, gomaya rasa. Clinically, it has been recommended for the treatment of *Apasmara*, *Jvara*, Pandu and *Kamala*[2]. These products comprise antioxidant, antibacterial, anti-carcinogenic, hepatoprotective, wound-healing and immunostimulant properties. It has the potential to reduce the production of free radicals[3].

Materials and Methods

In this paper a review is done on Panchagavya ghrita mentioned in Charaka Samhitha, Astangahridaya Utharastana, Sahasrayoga, Bhaishajya Ratnavali and Yogaratnakara, Chakradatta and available research articles.

Panchagavya ghrita

गोशकृद्रसदध्यम्लक्षीरमूत्रैः समैर्घृतम्|
सिद्धं पिबेदपस्मारकामलाज्वरनाशनम्|| इति पञ्चगव्यं – cha.chi.10/17

The combination contains 5 ingredients: Gomayarasa (Cow dung), Godadhi (Curd), Goksheera (Milk), Gomutra (Cow's urine) and Goghrita (Ghee) all the drugs are taken in equal quantities and the gritha is prepared as per the common preparatory techniques regarding ghrita[4].

According to Ayurveda, the action of a drug is based on its guna, veerya, vipaaka and prabhaava. These as themselves or as combinations determine the status of drug action in the body. The action of the drug always depends on rasapancaka and it goes in line with modern pharmacodynamics[5]. Besides that, the drug action also depends on the action of agni on that drug.

Table 1. Properties and pharmacological actions of five cow products[6]:

	Goksheera	Gomutra	Gogritha	Godadhi	Gomaya rasa
Rasa	Madhura	Madhura amla Kashaya	Madhura	katu, tikta, kashaya	Tiktha, kashaya
Virya	Sheeta	ushna	Sheeta	Ushna	Ushna
Vipaka	Madhura	Madura, amla	Madhura	Katu	Katu
Guna	Guru, Snigdha, Shita, Sara	Guru, Snigdha, Ushna, Ruksha	guru, snigdha, sheeta	Tikshna, Ushna, Laghu	Laghu
Doshaghnata	Vata pittahara	Vatahara kapha pittakara	tridoshahara, vishahara	kaphavatahara pitta krut	pittakrut vatahara
Rogaghnata	Manasa roga, Udara Roga (GITdisorders), Fever, Hunger, Thrist, Blood disorders	Jwara, Raktaja vyadhis (blood disorders), Mutrakruchhata	Unmada apasmara jeerna jwara murcha	Kusta Kamala	Kasa, twak akshi rogas

Table 2. Analytical parameters of five cow products-

cow milk[7]	cow curd	cow ghee[8]	Fresh cow dung[9]	cow's urine
Water-86.2% Total solids-12.5% Ash content 0.74% Acidity 0.15% Sugar 4.5%, Fat 4.45%, Solids non fat 8.77% Ph 6.5 Specific gravity 1.029 Casein 2.86% Protein 3.77% Lacto albumin 0.70% Vitamin C 0.028 mg/ml	Loss on drying 87.78% Ash content 0.75% Acid soluble ash Negligible Total solids 12.22% Fat content 4.0% Carbohydrate 3.0% Minerals 0.8% pH 4 Specific gravity 1.03	Parameters Observation Loss on drying 0.15% Ash content 0.10% Acid insoluble ash 0.0009% Fat content 99.83% Saponification value 222.9 Iodine value 34.6 Specific gravity 0.935 Acid value 2.52 Refractive value-1.456, Unsaponifiable matter 0.31	Loss on drying 83.19% Ash content 2.37% Acid insoluble ash 1.3% Total solid 16.38% Organic matter 80.0% Nitrogen 1.23% Potash 0.75%	Loss on drying 98.88% Ash content 0.37 % Acid insoluble ash Negligible Total solids 1.12% Organic matter 78.82% Nitrogen 10.6% Potash 7.2% pH 8.2 % Specific gravity 1.0482

Table 3.Panchagavya Ghrita formulations mentioned in various Ayurvedic literature.

Yoga & Reference	Ingredients with ratio	Indication
Maha Panchagavya Ghrita Charaka.chi.10/18-24	Kwatha Dravya 24 herbal drugs are taken in 2 pala qty. Kalka dravya - 18 herbal drugs are taken in 1 karsha qty and Five cow products are taken in 1 prastha qty each	Apasmara, unmada, shotha, udara roga, gulma, arsha, pandu, kamla, halimaka, grahabadha and chaturthaka jwara

Panchagavya Ghrita Charaka chi. 10/17	Cow ghee, milk, curd, urine, dung juice are taken in equal qty each	Apasmara, kamala, jwara
Maha Panchagavya Ghrita Astanga hrydaya.utt.7/18	Kwatha dravya24 herbal drugs are taken in 2 pala qty. Kalka dravya - 18 herbal drugs are taken in 1 karsha qty and Five cow products are taken in 1 prastha qty each	Jwara, apasmara, udara roga, bhagandara, shopha, arsha, kamala, pandu, gulma, kasa and graha badha
Panchagavya ghrita Yoga ratnakara Bhaishjya ratnavalli 25/36	Cow ghee, milk, curd, urine, dung juice are taken in equal qty each	Chaturthika jwara, unmada, graha baadha and apasmaraa
Panchagavya gritha (bruhat)Sahasrayoga	17 kalka Dravya Drava Dravya – Gomaya -½ part Gomutra-1part Goksheera -8part Godadhi -5part	Putra ayushkaraka Mahagrahahara bhutamayagna
Panchagavya Ghrita AFI, part 1 6:25	Goghrita was taken in 768 gm and rest each four ingredients are taken in 3.07 kg qty each	Apasmara, jwara, unmada and kamala

Discussion

Panchagavya ghrita (PGG) is an ancient formulation mentioned in Ayurvedic classics with plenty of clinical utility. It acts on sarva dhatu, mainly on rasa, rakta, majja dhatu.

PGG enhances the gut flora with a healthy microbiome and maintains a healthy digestive system, GUT-BRAIN AXIS – acts on manovaha srotas and cures manovikara.

it contains antioxidants, has free radical scavenging activity. There by manages most of the chronic disorders which are the result of oxidative stress like cancer, diabetis, obesity and CAD. Rich in omega fatty acids and thus aids in better absorption and metabolism.

Clinical utility of Panchagava ghrita (PGG)

1. **Pandu (anemia)**

पञ्चगव्यं महातिक्तं कल्याणकमथापि ।।
स्नेहनार्थं घृतं दद्यात् कामलापाण्डुरोगिणे॥- cha.chi.16/43

In pandu roga, it is suggested to use the PGG for snehapana as poorva karma for vamana and virechana. If patient is unfit for the shodanadi karma, it can also be given as Shamanaga Sneha, it removes avarana and does strotho shodhana and improves the agni.

PGG reaches rasa, raktha, asthi, majjadi dhatus and does poshana of sarva dhatu.

2. **Gara visha** - Due to food colors, flavoring agents and adulterants can be considered as gara visha. Goghrita is the best Vishahara and PGG does the shodhana and eliminates the visha from the body.
3. **Unmada** - Go mutra present in this does sroto shodhana and thus removes avarana. Ksheera and ghrita in it does mano pusti and is a best rasayana. Go dadhi is a good probiotic and is helpful in solving most of the problems related to gut and brain.
4. **Akshi vikara** (Eye disorders) - As goghrita ans goksheera is indriya prasahana, gomutra in it acts as malahara. PGG acts as chakshusya (improves vision).
5. **Vandhyatwa** (Infertility) **-** Goksheera is sadhyo shukravardaka and gomutra and goyamayarasa by its ushna theekshna property clears the ama and avarana, provides bala to the reproductive system.
6. **Anidrata** (Insomnia) **-** Goksheera, goghrita balances the impaired vata and provides a soothening effect to brain induces sleep & also improves sleep quality.
7. **Smruthi bramsha** (Alzheimers) **-** Goksheera, goghirta are known as Medhya dravyas, act on sadhaka pitta and vyana vata improves memory, Gomutra removes avarana and PGG works in dementia also.
8. **Kampa vata** (Parkinsons disease) **-** PGG balances the chala guna of vata and normalizes the tridosha improves the quality of life.
9. **Shotha** - PGG can be used as Shothahara (anti-inflammatory), vrana ropana, helps in cell regeneration. It acts as rasayana for mutravaha srotas and due to its ruksha and ushna guna does kleda shoshana.

Different dosage forms

Depending on the Avastha of roga and rogi, palatability and convience medicines can be given in different forms. Example

- Panchagavya avarthana ghrita capsule
- Panchagavya Netra bindu, nasya (nasal drops)
- Panchagavya vati, Panchagavya gana vati
- Panchagavya avaleha, guda, granules and so on.

Researches on Panchagavya ghrita

1. **Pharmacodynamic and pharmacokinetic interaction of *Panchagavya Ghrita* with phenytoin and carbamazepine in maximal electroshock induced seizures in rats[10]**

Male Wistar rats were administered PG 500, 1000, 2000, and 4000 mg/kg orally for 7 days and seizures were induced by MES. For interaction studies, PG (4000 mg/kg) was administered along with a sub-therapeutic dose of PHT (20 mg/kg, p.o.) and CBZ (10 mg/kg, p.o.). Behavioral parameters were assessed. Oxidative stress markers and serum levels of PHT and CBZ were estimated. Tonic hind limb extension, cognitive impairment, and oxidative stress produced by MES were reversed by PG (4000 mg/kg). Co-administration of PG (4000 mg/kg) with a sub-therapeutic dose of PHT and CBZ potentiated antiepileptic effect and ameliorated cognitive impairment as well as oxidative stress. Although, there was a slight increase in serum levels of PHT and CBZ on co-administration with PG, it was statistically insignificant.

Co-administration of PG with low doses of PHT and CBZ caused complete seizure protection. This suggests the potential of PG as an adjunct in epilepsy with improved efficacy and tolerability.

Achalia G.S., Kotagle N.R., Wadodkar S.G., Dorle A.K.. (2003, June),

Hepatoprotective activity of Panchagavya Ghrita against Carbontetrachloride

induced Hepatotoxicity in rats, Indian Journal of Pharmacology, 35:p. 308-311

2. **Hepatoprotective activity of panchagavya ghrita against carbontetrachloride induced hepatotoxicity in rats[11].**

150 to 300 mg /kg per oral route, showed a significant reduction in CCl4-induced hepatotoxicity.

3. **Assessment of Nootropic Activity of Panchagavya Ghrita in Animal Models[12]**

21 days treatment of PGG at therapeutic dose determined Nootropic activity as compared to Piracetam drug in Diazepam-induced amnesia and Morris water maze animal models.

Pandey A., Assessment of nootropic activity of Panchagavya Ghrita in animal models,

Dec.2014, Unpublished data.

Conclusion

Panchagavya Ghrita is a time-tested Ayurvedic formulation with immense therapeutic potential. Its diverse pharmacological properties, including Kapha-Vatahara, Agnideepana, Srotoshodhana, Medhya, Rasayana, and Vishahara, contribute to its efficacy in managing a wide range of diseases. The formulation has shown promising results in conditions ranging from mild ailments like fever and cough to more complex disorders, including neurodegenerative diseases and cancer. Its ability to enhance cognitive function, immunity, and overall vitality makes it a valuable addition to Ayurvedic practice. Furthermore, its adaptability across all age groups, with appropriate dosage modifications, highlights its versatility and safety. Future research and clinical studies can further validate and expand its scope, reinforcing its role in integrative medicine.

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