

GOMUTRA (COW URINE): A COMPREHENSIVE REVIEW OF AYURVEDIC CONCEPTS AND PHARMACOLOGICAL ACTIVITIES

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ABSTRACT

Gomutra (cow urine) has been extensively described in Ayurveda as a therapeutically important substance with diverse medicinal applications. Ancient Ayurvedic classics, including the Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya, recognize Gomutra as one of the Ashta Muta (eight types of animal urine) and elaborate on its pharmacological attributes, therapeutic indications, and clinical utility. It also constitutes an essential component of Panchagavya, a traditional combination of cow urine, milk, curd, ghee, and dung juice, which forms the basis of Panchagavya Chikitsa. The growing global burden of lifestyle disorders, immune-mediated diseases, chronic infections, and antimicrobial resistance has stimulated renewed scientific interest in traditional Ayurvedic interventions. Contemporary experimental studies have demonstrated that Gomutra exhibits immunomodulatory, antimicrobial, antioxidant, and bioenhancing properties, indicating its potential as an adjunctive therapeutic agent in disease management. This review critically examines the classical Ayurvedic literature together with available scientific evidence on the pharmacological activities and therapeutic potential of Gomutra. Although the existing findings are encouraging, robust preclinical investigations and well-designed clinical trials are essential to validate its efficacy, safety profile, and underlying mechanisms of action before its broader clinical application.

KEYWORDS: Gomutra, cow urine, Ayurveda, Panchagavya, immunomodulatory activity, antimicrobial activity, antioxidant activity, bioenhancer.

INTRODUCTION

Natural products have been used for the promotion of health, prevention of diseases, and treatment of various ailments since ancient times. Among these, Gomutra (cow urine) occupies a unique position in Ayurveda due to its diverse therapeutic applications. In Indian tradition, the cow is revered as Gaumata and Kamadhenu, symbolizing prosperity, nourishment, and well-being. The five products obtained from the cow—cow urine, milk, curd, ghee, and dung—collectively known as Panchagavya, have been widely utilized in Ayurveda for medicinal, religious, agricultural, and environmental purposes. Among these, Gomutra is considered one of the most valuable components because of its unique bioactive constituents and therapeutic potential.

Classical Ayurvedic texts such as the Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya, Bhavaprakasha, and various Nighantus describe the properties, actions, and therapeutic applications of Gomutra in detail. According to Ayurveda, Gomutra possesses Katu (pungent), Tikta (bitter) Rasa, Kashaya-anurasa (slightly astringent), Ushna (Exothermic), Tikshna (Intense), Laghu (light), Deepana (appetite-stimulating), and Pachana (digestive) properties. It is traditionally indicated in the management of Kapha- and Vata-related disorders, Krimi (helminthiasis), Kushtha (skin diseases), Visha (poisoning), Shopha (inflammation), Medoroga (obesity), Pandu (anaemia), Arsha (haemorrhoids), Gulma (abdominal masses), Prameha (urinary disorders), impaired digestion, and certain hepatic disorders.^[1,2]

Chemical investigations have revealed that Gomutra contains several biologically active constituents, including minerals, vitamins, enzymes, urea, uric acid, creatinine, volatile and non-volatile organic compounds, phenolic compounds, and other trace elements. These constituents are believed to contribute to its diverse pharmacological activities. Cow Urine Distillate (CUD) has gained particular scientific attention because of its bioenhancing property, which has been recognized internationally and protected through United States patents. Several studies have also suggested that CUD may improve the bioavailability and therapeutic efficacy of certain antimicrobial and anticancer drugs.

In recent decades, there has been growing global interest in traditional and natural medicines due to the increasing prevalence of chronic diseases, antimicrobial resistance, adverse effects associated with long-term use of synthetic drugs, and the need for safer and cost-effective therapeutic alternatives. Consequently, Gomutra has become an important subject of scientific investigation. Experimental and preliminary clinical studies have reported a wide range of biological activities, including antioxidant, antimicrobial, antifungal, immunomodulatory, anti-inflammatory, hepatoprotective, bioenhancing,

and anticancer effects, highlighting its potential as a complementary therapeutic agent.

At present, the significance of Gomutra extends beyond traditional medicine. It has also found applications in organic farming, sustainable agriculture, environmental conservation, and the development of natural health products. The integration of traditional Ayurvedic knowledge with contemporary scientific research may provide a stronger evidence base for its therapeutic applications. Continued multidisciplinary research is expected to further elucidate its pharmacological mechanisms, validate its clinical efficacy, and expand its potential role in evidence-based integrative healthcare.

Mythological Belief about Cow Urine

In Indian mythology and the Vedic tradition, cow urine (Gomutra) has been regarded as a sacred substance with both spiritual and therapeutic significance. According to the Damar Tantra, Lord Shiva explained the principles and benefits of Shivambu (urine therapy) to Goddess Parvati. In this text, urine is referred to as Shivambu, meaning "the water of Shiva." The Shivambu Kalpa Vidhi, a section of the Damar Tantra, describes urine therapy as an ancient healing practice that has traditionally been associated with the Vedic system of knowledge.

References to urine therapy are also found in several classical Ayurvedic texts. In Bhavaprakasha, urine is described as possessing Vishaghna (detoxifying or anti-poisonous) and Rasayana (rejuvenating) properties. According to traditional Ayurvedic concepts, it is believed to support detoxification, promote purification of the blood, improve skin health, and help maintain vitality even in old age.^[3]

Among the various types of urine described in Ayurveda, cow urine is considered especially important. Traditional literature attributes to Gomutra the ability to counteract toxin-induced disorders, aid in the detoxification of harmful substances, and enhance the body's natural defence mechanisms. It is also traditionally believed to strengthen immunity and improve resistance against diseases. These descriptions represent traditional mythological and Ayurvedic beliefs, while their therapeutic potential continues to be explored and evaluated through modern scientific research.^[4]

Properties and use of Gomutra (Cow urine) according to Ayurveda

Acharya	Qualities	Effect on Doshas	Other effect on body
Charaka ^[5]	Pungent salty with slight sweet	Decrease Vata, Pitta and Kapha	Wormicide, use in various skin disorders, beneficial in leprosy, itching and ascites
Sushruta Sutra ^[6]	Pungent, sharp, hot, light, alkaline	Decrease Vata and Kapha	Promotes intellect and digestive power, beneficial in colic, digestive disorders, constipation, useful as purgative and for non lubricant enema
Astang Samgraha ^[7]	Pungent, hot	Increases Pitta, Decreases vata and kapha	Absorption of materials in between cell and respective environment, wormicide, anti hemorrhoid, purgative, decoction enema

Synonyms^[8]

: Goamba, Godrava, Gojalam, Gomutram, Gonishyandha, Goprasrav, Gopanecyam, Goneeram, Gokeelalam, Gosravam, Govapam, Surabheejalam.

Classification:

Charaka samhitha(CS)	Katuka skandham, Virechana dravya Samgraham
Susrutha Samhitha(SS)	Muthra vargam, Siovirechanam
Ashtanga Samgraham(AS)	Muthra vargam, katu skandham
Ashtang Hridayam(AH)	katu skandham, Nikumbhadi virechanaganam
Bhavaprakasa Nighantu(BPN)	Muthra vargam
Kaiyadeva Nighantu(KN)	Muthra vargam
Ras Tarangini	Panchagavya

Pharmacological Properties of Gomutra Mentioned in Various Texts

		CS	SuS	BPN	KN.	RN	DN	HS
Rasa	Madhura	+	-	-	+	-	-	-
	Katu	-	+	+	+	+	+	-
	Tikta	-	-	+	+	-	-	-
	Kashaya	-	-	+	+	-	-	+
Guna	Tikshna	-	+	+	+	+	+	+

	Laghu	-	+	+	+	+	+	-
	Sara	-	-	-	-	--	+	-
Veerya	Usna	+	+	+	+	-	+	+
Dosh karma	Pittakar	-	+	+	+	+	+	-
	Vata nashak	-	+	+	+	+	+	+
	Kapha nashak	-	+	+	+	+	+	+
Action	Agni deepana	-	+	+	+	+	+	-
	Medhya	-	+	-	+	+	+	+
	Pachana	-	-	-	+	-	-	+
	Bhedana	-	-	-	+	-	-	+
	Lekhana	-	-	-	-	-	+	+
	Balya	-	-	-	-	-	-	+
Indication	Shula	-	+	+	+	-	+	+
	Gulma	-	+	+	+	-	-	+
	Udara	-	+	+	+	-	+	-
	Aanaha	-	+	+	+	-	+	-
	Virechana	-	+	-	+	-	-	-
	Asthapana	-	+	-	-	-	-	-
	Krumi	+	-	-	-	-	-	+
	Kustha	+	-	+	+	-	-	+
	Kandu	+	-	+	-	-	-	-
	Swasa	-	-	+	+	-	-	-
	Arsha	-	-	+	+	-	-	-
	Pandu	-	-	+	+	-	-	-
	Twakarog	-	-	-	-	-	+	-
	Bhrurog	-	-	-	-	-	-	+
	Shankha rog	-	-	-	-	-	-	+
	Kantharog	-	-	-	-	-	-	+
	Hrudyarog	-	-	-	-	-	-	+
	Kilas	-	-	+	-	-	-	+
	Mukha rog	-	-	+	-	-	-	+
	Akshi rog	-	-	+	-	-	-	+
	Atisara	-	-	+	-	-	-	+
	Gudrog	-	-	+	-	-	-	+
	Vata vikara	-	-	+	-	-	+	+
	Netra rog	-	-	-	-	-	-	+
	kasa	-	-	+	-	-	-	+
	chardi	-	-	-	--	-	+	-

USES OF COW URINE IN PURIFICATION AND DETOXIFICATION PROCESS[9]

1. Purification of guggul (Commiphora mukul)
2. Detoxification of aconite
3. Detoxification of dhatura (Dhatura metel)
4. Detoxification and purification of silver
5. Purification of loha(Iron)
6. Purification of Swarna(Gold)
7. Purification of Tamra(Copper)
8. Purification of Naga(Lead)
9. Purification of bhallataka(Semicarpus anacardium)
10. Purification of Abhraka(mica)
11. Purification of Kharpar(Calamine)
12. Purification of Rajavarta(Lapis lazuli)
13. Detoxification and purification of Kuchala (Strychnos nuxvomica)

Some important formulation in which gomutra is used ^[9]

1. Ashwinikumarras
2. Arshakuthar rasa
3. Sanjivani Vati
4. Mandurvatak
5. Punarnavamandur
6. Panchamrutlohamandur
7. Tryushanadimandur
8. Agnimukhmandur
9. PanchagavyaGhrita

References of Gomutra in Classical Ayurvedic Literature and Its Uses.^[10,11]

Sr. No.	Use of Gomutra (Cow urine) in various formulation/other description
1.	8 types of urine and each of its properties and indications
2.	Taila Panchaka use in Gulma
3.	Daruharidra(berberis aristata) + Gomutra(CU) Rasanjan + Gomutra use in Kushta(Leprosy)
4.	Swarnamakshik + Gomutra in Kushta (Leprosy)
5.	Chitrakadilepain Kushta (Leprosy) Mansyadilepa
6.	Karvir(Nerium indicum) + Gomutra in Kushta(Leprosy)
7.	Tiktekshvakaditaila use in Kushta (Leprosy)
8.	Kanakshiritaila use in Kushta(Leprosy)
9.	Kakodumbar + Bakuchibij + Chitrakmul use in Kshvitra(Vitiligo)
10.	Lashunadya Ghrita(ghee) use in Unmada(Psychiatric disorder)
11.	Siddharthak Ghrita use in Unmada (Psychiatric disorder)
12.	Panchagavya Ghrita use in Apasmara(Psychiatric disorder)
13.	Mahapanchagavya Ghrita use in Apasmara(Psychiatric disorder)
14.	Katabhyaditaila for local application in Apasmara(Psychiatric disorder)
15.	Gomutra use for bath in Apasmara(Psychiatric disorder)
16.	Gomutra Nasya(inhalation) in Apasmara(Psychiatric disorder)
17.	Gomutra + Haritakichurna(powdered of Terminalia chebula) use in Kaphajshotha(swelling)
18.	Milk + Gomutra drink in vatajshotha
19.	Siddha milk + gomutra for virechan(Purgation) in Pittodar
20.	Cow urine use in Kaphodar(one of type of Ascites)
21.	Rohitakadi yoga in Udara(Ascites)roga
22.	Gomutra is pathya(good for health) in Udara(Ascites)
23.	Chitrakghrita use in Udara (Ascites)
24.	Patoladichurna + gomutra in Udara (Ascites)
25.	Narayan churna + gomutra in Udara (Ascites)
26.	Hapushadyachurna + gomutra in Udara (Ascites)
27.	Milk + Gomutra use in Udara (Ascites)
28.	Guda + Haritaki + Gomutra in Arsha (Piles)
29.	Mahish(buffalo) Ghrita + Gomutra + Daruharidra use in Pandu(Anaemia)
30.	Gomutra+ Milk for virechan in Pandu
31.	Gomutra + Haritaki use in Kaphaj Pandu
32.	Mandurvataka use in Pandu (anaemia)
33.	PunarnavaMandur use in Pandu (Anaemia)
34.	Pashanbhedadi Ghrita use in Ashmari (Renal Stone)
35.	Katphaladi Kashay (Decoction) use in Hrudrog(Heart disease)
36.	Pippalyadichurna(Powdered) + Gomutra use in Hrudrog (Heart disease)
37.	Sarshapa+ Gomutrause in Urusthambha
38.	Sarshapa+ Gomutrause in Urusthambha
39.	Sarshapa+ Gomutrause in Urusthambha
40.	Gomutra use in KaphajShotha
41.	Gomutra use in purification of Bhallatak
42.	Gomutra use in KaphajShotha
43.	Guggulu + Gomutra use in Urusthambha Shilajit + Gomutra
44.	Karanja + Sarshapa + Gomutra use in Urusthambha
45.	Kukkutpurish + Gunja + Haridra + Pippali + Gomutra use as a Arshoghna lepa
46.	Gomutra + Haritaki + Honey use in Internal Piles
47.	Gomutra + chitrak + Trikatu(Suntha,Marich,Pippali) use in Kshwitra(Vitiligo)
48.	Mahanil Ghrita use in Kshwitra (Vitiligo)
49.	Haridra(curcuma longa) + Gomutra use in Kushta (Leprosy)
50.	Karavir(Nerium indicum) + Vidanga(Embelia ribes) + Gomutra use as a lepa in kushta(Leprosy)
51.	Vajraka Taila use in Kushta(Leprosy)
52.	Trikatu + Gomutra + Kshar + Mushkakadi Gana use as Basti(medicated enema) in Kaphaja Udara (Ascites)
53.	Gomutra use in Kaphaprakopak Vikara in Basti
54.	Gomutra use in Lekhana Basti

CHEMICAL COMPOSITION OF COW URINE (GOMUTRA)

Urine is generally considered to possess natural antimicrobial properties. In Ayurveda, cow urine (Gomutra) is regarded as an important constituent of Panchagavya and is traditionally believed to play a role in supporting the body's immune

responses and maintaining physiological balance.^[12,13]

According to Ayurvedic principles, Gomutra helps restore homeostasis by compensating for deficiencies and regulating excessive accumulation of certain body constituents. Biochemical analyses have demonstrated that cow urine contains a wide range of naturally occurring bioactive compounds that may contribute to its biological activities. These include sodium, nitrogen, sulphur, vitamins A, B, C, D, and E, along with minerals such as manganese, iron, silicon, chlorine, magnesium, and calcium. Other reported constituents include phosphate, citric acid, succinic acid, lactose, carbolic acid, creatinine, enzymes, and hormones.

The contents of cow urine:

Water – 95%

Urea – 2.5%

Minerals, Salts, Hormones, Enzymes – 2.5%

Additional significant constituents with their functions are as follows:

Chemical constituents of cow urine and its effects^[14,15]

Sr.No	Chemical constituents	Effect of Chemical Ion
1.	Nitrogen (N ₂ , NH ₂) (1-1.7ml/kg/day)	Removes blood abnormalities and toxins, Natural stimulant of urinary tract activates kidneys and it is diuretic.
2.	Sulphur (S) (3-5mg/kg/day)	Supports motion in large intestines. Cleanses blood.
3.	Ammonia (NH ₃) (1-1.7ml/kg/day)	Stabilize bile, mucous and air of body. Stabilises blood formation.
4.	Copper (Cu)	Controls unwanted fat deposition
5.	Iron (Fe)	Maintains balance and helps in production of red blood cells. Stabilises working power.
6.	Urea (CO(NH ₂) ₂)	Affects urine formation & removal. Antimicrobial
7.	Uric Acid (C ₅ H ₄ N ₄ O ₃) (14mg/kg/day)	Removes heart swelling or inflammation. It is diuretic therefore destroy toxins.
8.	Phosphate (P)	Helps in removing stones from urinary tract
9.	Sodium (Na) (0.2-1.1mmol/kg/day)	Purifies blood. Antacid
10.	Potassium (K) (0.08-0.15mmol/kg/day)	Cures hereditary rheumatism. Increases appetite. Removes muscular weakness and laziness
11.	Manganese (Mn)	Germicidal, stops growth of germs, protects decay due to gangrene
12.	Carbolic Acid (HCOOH)	Germicidal, stops growth of germs and decay due to gangrene
13.	Calcium (Ca) (0.1-1.4ml/kg/day)	Blood purifier, bone strengthener, germicidal
14.	Salt (NaCl)	Decreases acidic content of blood
15.	Vitamins (A, B, C, D, E)	Vitamin B is active ingredient for energetic life and saves from nervousness and thirst, strengthens bones and reproductive power.
16.	Lactose (C ₆ H ₁₂ O ₆) (3.7830 millimole)	Gives satisfaction, strengthens mouth, strengthens heart, removes thirst and nervousness
17.	Hippuric Acid(C ₉ H ₉ NO ₃)	Removes toxins through urines
18.	Creatinine(C ₄ H ₇ NO ₂) (15-20mg/kg/day)	Antibacterial
19.	Aurum Hydroxide(AuOH)	It is germicidal and increases immunity power. Highly antibiotic and anti-toxic
20.	Enzyme urokinase	It is responsible for dissolving the blood clot, improvement of heart disease, blood circulation
21.	Colony Stimulating factor	Effective for cell division & multiplication
22.	Erythropoietin stimulating factor	Major stimulating factor for production of Red blood cells
23.	Gonadotropin	Promotes menstrual cycle, sperm production
24.	Anticancer substances	Prevents multiplication of carcinogenic cells
25.	Enzymes (Lactate Dehydrogenases,	Make healthy digestive juices, increases immunity.

	Alkaline Phosphatase, Phosphatase, Amylase)	Acid
26.	Phenols (4.7580mg/100ml)	Bactericidal to gram positive and gram-negative bacteria. Therefore, presence of phenols in cow-urine has a potent anti-microbial activity
27.	Water H ₂ O	It is life giver. Maintains fluidity of blood, maintain body temperature
28.	Other Minerals	Increases Immunity

Any deficiency or surplus of these elements inside the body causes disorders. Cow urine comprises all of these elements with having a balanced proximate composition. Consequently, consumption of cow urine reestablishes the balance of these constituents and therefore helps in curing from incurable diseases.

Mechanism of Action of Cow Urine

The biological activities of cow urine (CU) are attributed to a complex mixture of volatile and non-volatile constituents.^[16-19] Its antimicrobial and germicidal effects are primarily associated with the presence of compounds such as urea, creatinine, swarnkshar (aurum hydroxide), phenols, carboic acid, calcium, and manganese.^[20-22] In addition, amino acids and urinary peptides present in CU may enhance bactericidal activity by increasing the hydrophobicity of bacterial cell surfaces, thereby facilitating microbial destruction.^[23]

Cow urine has also been reported to stimulate the phagocytic function of macrophages, contributing to enhanced innate immune responses. Fresh cow urine generally contains a higher concentration of phenolic compounds than cow urine distillate (CUD), which may explain its comparatively stronger antimicrobial activity. Upon photo-activation, several volatile inorganic and organic compounds, including carbon dioxide, ammonia, methane, methanol, propanol, acetone, and nitrogen-containing metabolites, are generated. These changes increase the acidity of photo-activated cow urine, which may further enhance its bactericidal potential.^[24-27]

Certain inorganic constituents, such as phosphorus, chloride, and dimethylamine, may also contribute to its antimicrobial effects. Cow urine has additionally been suggested to inhibit the development of antimicrobial resistance by interfering with the bacterial R-factor, a plasmid-associated genetic element responsible for the transfer of antibiotic resistance.

The presence of phenolic acids, including gallic, caffeic, ferulic, o-coumaric, cinnamic, and salicylic acids, contributes to its antifungal activity. Moreover, uric acid and allantoin possess antioxidant properties that help neutralize free radicals, reduce oxidative stress, and may support anticancer effects. These antioxidant constituents also protect lymphocytes from apoptosis, promote cellular survival, and facilitate DNA repair, thereby reducing oxidative damage and potentially slowing cellular aging.^[28,29]

Cow urine is also believed to exert immunomodulatory effects by promoting the synthesis of interleukin-1 (IL-1) and interleukin-2 (IL-2), enhancing the proliferation of B and T lymphocytes, and increasing the production of immunoglobulins (IgA, IgM, and IgG). Swarnkshar may further contribute to immune enhancement, while allantoin is recognized for accelerating wound healing and tissue repair. Traditional observations also suggest that the first voided urine collected early in the morning is relatively more sterile and contains higher concentrations of macro- and micronutrients, enzymes, and urea, which may improve its biological efficacy.^[30-33]

THERAPEUTIC / PHARMACOLOGICAL ACTIVITIES OF COW URINE

1. Analgesic Activity

Experimental studies using the rat tail immersion method have demonstrated that cow urine and its distillate possess significant analgesic (pain-relieving) activity. Animals treated with cow urine showed a pain-relieving response comparable to those receiving the standard drug, Diclofenac sodium. This analgesic effect is believed to be associated with the presence of steroidal compounds and certain volatile fatty acids naturally found in cow urine.^[34]

2. Activity in Hemorrhoids

Clinical studies have indicated that cow urine extract may be beneficial in the management of hemorrhoids. Oral administration of cow urine extract was reported to reduce the severity of symptoms and may help minimize complications associated with hemorrhoids. These findings suggest that cow urine could serve as a supportive therapeutic agent in the conservative management of this condition.^[35]

3. Wound Healing Activity:

The wound healing potential of cow urine was evaluated in Wistar albino rats using the excision wound model. The primary parameter assessed was the rate of wound contraction. The findings showed a progressive reduction in the wound area following the external application of cow urine. A significant improvement in wound healing was observed from the fourth day onward in both male and female rats compared with the other experimental groups. By the 14th day, the wounds in the cow urine-treated group had almost completely healed, with healing outcomes comparable to those of the standard drug, Nitrofurazone. These results suggest that the topical application of cow urine may accelerate the wound healing process and promote faster tissue repair.^[36]

4. Immunomodulatory Activity:

Cow urine has been reported to possess immunomodulatory and immunostimulatory properties in both plants and animals. In Ayurveda, it is traditionally used as a component of formulations such as Panchgavya, which are believed to enhance the body's natural defense mechanisms against infections. Experimental studies have indicated that dried cow urine exhibits greater immunostimulatory activity than its methanol, ethyl acetate, aqueous, and acetone extracts. Classical Ayurvedic literature also suggests that the regular consumption of cow urine may help strengthen both humoral and cell-mediated immune responses. Furthermore, studies have shown that cow urine distillate can stimulate the proliferation of T and B

lymphocytes, enhance blastogenesis, and increase IgG levels in experimental animals, including mice and chicks.^[37,38]

5. Hepatoprotective Activity:

Daily doses of 1-2 ounces of warm cow urine are used to treat cirrhosis of liver. Urine as alone or mixed with honey/salt is also directed for Liver and other problems. Antimony sulphide and cow urine administered internally are used to cure malignant jaundice.^[39]

6. Antidiabetic Activity:

Gomutra Ark (distilled cow urine) has shown promising antidiabetic activity in experimental studies. In alloxan-induced diabetic Wistar rats, treatment with Gomutra Ark significantly reduced blood glucose levels, although its effect was less than that of the standard antidiabetic drug, Glibenclamide. It also helped lower serum cholesterol and triglyceride levels and improved antioxidant status by reducing oxidative stress markers such as malondialdehyde (MDA). These beneficial effects may be due to the presence of volatile fatty acids and other bioactive compounds, which possess antioxidant properties and contribute to its antihyperglycemic action.

7. Stones:

It can be used for stones (kidney, gall bladder etc.). A glass of fresh cow urine should be taken as a first thing in the morning for 21 days. Uric acid in cow urine liquefies these stones to a manageable size.^[40]

8. Skin diseases:

It is very cooperative in all kind of skin problems, itching, sunburns, eczema, psoriasis, acne Etc^[41]. It also renders the hair soft and clean. Cow urine is completely sterile after secretion and has antiseptic effect.

9. Antimicrobial Activity

Antimicrobial resistance has become a major global health concern due to the excessive use of antibiotics. Several studies have demonstrated that cow urine and its extracts possess antimicrobial activity against both Gram-positive and Gram-negative bacteria, including *Escherichia coli*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Staphylococcus aureus*, *Salmonella typhi*, and *Bacillus subtilis*. In some studies, the antimicrobial activity of cow urine was found to be comparable to commonly used antibiotics such as ofloxacin, ciprofloxacin, ampicillin, and gentamycin.^[42]

10. Anticancer Effect

Cow urine possesses antioxidant properties that help neutralize free radicals and reduce oxidative stress, thereby protecting cells from oxidative damage. It has also been reported to support DNA repair mechanisms, suggesting its potential role as an adjunct in cancer prevention and management.

In an experimental study conducted on 70 Swiss albino mice over a period of 16 weeks, the chemopreventive effect of cow urine was evaluated. Skin papillomas were induced using 7,12-dimethylbenz[a]anthracene (DMBA) and promoted by repeated application of croton oil. The animals treated with cow urine exhibited a significantly lower incidence of tumors, reduced tumor yield, and decreased overall tumor burden compared with the untreated control group, indicating its possible protective effect against chemically induced carcinogenesis.

Clinical observations have also suggested that cow urine therapy may help improve cancer-related symptoms. Patients receiving cow urine therapy showed a gradual reduction in the severity of pain, inflammation, burning sensation, difficulty in swallowing, and irritation from the first to the eighth day of treatment. The proportion of patients with severe symptoms decreased markedly, while the number of patients with moderate and mild symptoms increased, reflecting an overall improvement in their clinical condition. These findings indicate that cow urine may have supportive benefits in cancer care; however, further well-designed clinical studies are required to establish its efficacy and safety.^[43]

11. Anthelmintic Effect:

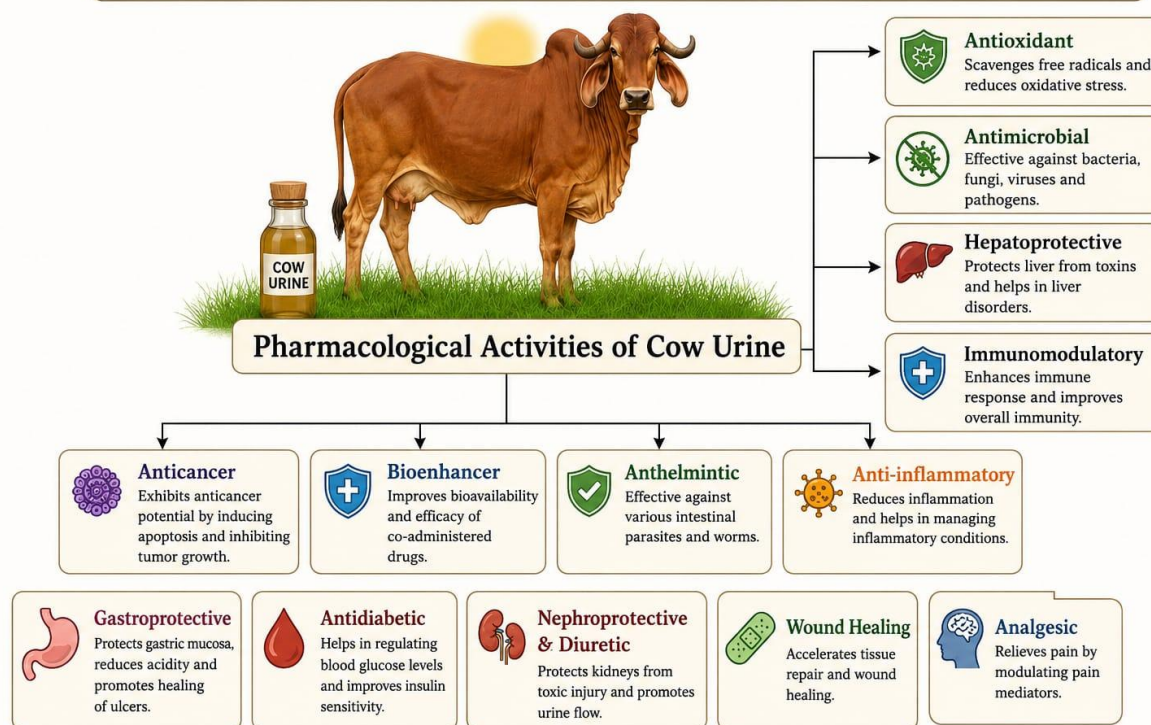
Cow urine concentrate (CUC) has shown promising anthelmintic activity in experimental studies. Its effect was evaluated on the adult Indian earthworm *Pheretima posthuma*, which is commonly used as a model due to its similarity to human intestinal worms. Treatment with CUC caused paralysis followed by the death of the worms, indicating significant wormicidal activity. The results were compared with the standard anthelmintic drug, piperazine citrate.

Another study investigated the anthelmintic potential of Panchagavya alone and in combination with the ethanolic extract of *Bauhinia variegata* Linn. The combination demonstrated greater efficacy than piperazine citrate, suggesting a synergistic effect. This enhanced activity is believed to be associated with cysteine protease, an enzyme that degrades the structural proteins of nematodes, ultimately leading to their destruction.^[44]

12. Bioenhancer Effect:

Bioenhancers are substances that do not produce significant therapeutic effects on their own at the administered dose but enhance the bioavailability and efficacy of other drugs. In Ayurveda, this property is described by the concept of Yogvahi, which refers to substances that improve the absorption and therapeutic action of accompanying medicines, thereby allowing lower doses and reducing the risk of adverse effects. Studies have demonstrated that cow urine distillate (CUD) acts as a natural bioenhancer by increasing the bioavailability of rifampicin, a first-line antitubercular drug. It has been reported to enhance the antimicrobial activity of rifampicin by up to seven-fold against *Escherichia coli* and up to eleven-fold against Gram-positive bacteria. Additionally, CUD facilitates the transport of antibiotics such as rifampicin, tetracycline, and ampicillin across the intestinal wall and artificial membranes, thereby improving their absorption and therapeutic effectiveness.^[45]

PHARMACOLOGICAL ACTIVITIES OF COW URINE



CONCLUSION

Gomutra (cow urine) has been recognized in Ayurveda as an important natural therapeutic substance and has been traditionally used in the management of various diseases, purification (Shodhana) procedures, and Panchagavya therapy. Classical Ayurvedic texts describe its properties, actions, and therapeutic applications, highlighting its long-standing medicinal importance. Modern scientific studies have also demonstrated that Gomutra possesses a wide range of pharmacological activities, including antimicrobial, antioxidant, immunomodulatory, anti-inflammatory, hepatoprotective, antidiabetic, anthelmintic, wound healing, bioenhancing, and potential anticancer effects. These activities are believed to be associated with the presence of various bioactive constituents, minerals, enzymes, and other chemical compounds found in Gomutra.

Although the available scientific evidence supports the therapeutic potential of Gomutra, most studies have been limited to in vitro experiments, animal models, and a small number of clinical investigations. Therefore, further well-designed preclinical and clinical studies are required to establish its safety, efficacy, standardization, optimal dosage, and mechanisms of action. The integration of traditional Ayurvedic knowledge with modern scientific research may provide a stronger scientific foundation for the therapeutic applications of Gomutra and further expand its potential in healthcare.

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