ISSN(Online) : 2319-8753
ISSN (Print) : 2347-6710

International Journal of Innovative Research in Science, Engineering and Technology

*(An ISO 3297: 2007 Certified Organization)*

**Vol. 5, Issue 9, September 2016**

# Bio-Enhancing Properties of Cow Urine – A Review

Farida P. Minocheherhomji

Associate Professor, Department of Microbiology, B. P. Baria Science Institute, Navsari, Gujarat, India.

**ABSTRACT:** Antibodies and other chemotherapeutic agents are widely used as conservative treatment in various microbial infections and diseases. Majority of the infections in human beings and animals are caused by bacteria and fungi, especially the spore formers, which are found to create hindrances in treatment. These organisms have the genetic ability to transmit and acquire resistance towards the chemotherapeutic drugs, and in return, the host faces many adverse effects of these drugs. So in order to combat these problems, research is being diverted towards the exploration of naturally available products. Cow as "Kamdhenu" is the fullfiller of all desires. Cow has symbiotic relationship with human beings. In the Veda, cow *(Bos indicus)* is considered as a most valuable animal and is revered equivalent to a mother. Different products are available from a cow like milk, ghee, curd, dung and urine, generally known as **Panchgavya**. They are used for many ayurvedic formulations. Out of these five products, Gaumutra has many medicinal properties and is used in the cure of number of diseases like Skin diseases, Kidney related urinary problems, Epilepsy, Anaemia, Constipation, Obesity, Blood pressure regulation and even in fight against cancer.

**KEYWORDS:** Antibodies, Bacteria, Cow Urine, Fungi, Panchgavya.

## I. INTRODUCTION

Nature is an infinite source of discovery of new drugs and its further development. Nature has a wide and complete repository of remedies to cure almost all ailments in human beings. Innumerable materials derived directly or indirectly from plants and animals are reported to possess anti oxidant and anti microbial properties. Utilisation of such precious and holy animal derived material: cow urine, has these properties [1]. Cow, with a scientific name *'Bos indicus'*, is considered in the Vedas to be a holy and precious animal and is adored as the 'mother of mankind'. A composition of cow excretion, urine, dung, with milk, curd, and ghee in appropriate proportions is known as "Panchgavya". This is, administered to women during delivery. Panchgavya is the prime constituent of many Ayurvedic preparations [2]. Cow urine, which is one of the main ingredients in Panchgavya, has an important therapeutic value. Cow urine is beneficial; cow has developed a symbiotic relationship with human beings [3].

## II. AYURVEDIC SIGNIFICANCE OF COW URINE

From time immemorial, Ayurveda has understood the value of a cow. It is a great producer of milk and the dairy products, having many 'sattvic' properties. Yogurt, Butter Milk, Organic Milk, ghee and other milk bi-products have a high nutritional value by providing Calcium and Protein to the human body tissues and cells. Ghee and cow dung fed in fire ceremonies popularly known as Yagna, has been found to help in purification of air. Ayurveda has a firm belief with proper facts to prove that some diseases cannot be totally cured by medicines alone; and here 'Panchamrit' has been propagated; a drink that is meant to heal. It is considered to be the 'nectar of gods' composed of five chief ingredients – yogurt, ghee, honey, sugar and milk. It is distributed in the congregation at the end of religious ceremonies. 'Panchamrit' has been believed to fill the in-taker with divine energy as it exhibits healing action from within.

Panchamrit prepared from cow urine is great elixir of life, pleasing to heart and giver of mental and physical strength, enhancing longetivity. It has capacity to balance bile, mucous and airy element. It has been observed to prevent heart diseases and lessen the effect of poison.

Indian Ayurvedic doctors regularly use cow urine as a natural medicine to treat many common disorders. Very few attempts have been made to correlate scientifically the nature of cow urine. In order to correlate ancient and traditional

ISSN(Online) : 2319-8753
ISSN (Print) : 2347-6710

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 5, Issue 9, September 2016

knowledge of the use of cow urine with the scientific methodologies and parameters of modern times, a study had been done using cow urine in different forms as immunomodulatory and antioxidant agent [4].

Cow urine after process is available in two forms:

1) Go Ark (Cow urine distillate), and
2) Ganavati (Cow urine tablet).

Three U.S. patents have been registered on Gomutra Ark (researched and authorized by U.S. government).

U.S. Patent No. 1 = 6410059, dated June 25, 2002

U.S. Patent No. 2 = 6896907, dated May 24, 2005.

U.S. Patent No. 3 = 7235262, dated June 26, 2007.

In India, cow urine based products are available in different forms like:

1) Medicines prepared from cow urine as a main ingredient.
2) Cool drinks prescribed as an anticancer potion.
3) Fertilizers using cow urine and cow dung.
4) Insecticides for farming activities.
5) Personal use products like: After Shave Lotion; Shampoos and Hair Oil for hair-care.
6) Disinfectants for home use.

## III. BIO-CHEMICAL IMPORTANCE OF COW URINE

Cow urine is a liquid discharge consisting of nontoxic waste material from the cow body. The main constituents of cow urine are Water: 95%, followed by Urea: 2.5%, and the rest 2.5% is a mixture of different minerals, salts, hormones, and enzymes. Antimicrobial and germicidal properties of cow urine are due to the presence of urea, creatinine, aurum hydroxide, carbolic acid, phenols, and salts of calcium, and manganese. Its anticarcinogenic effect is due to uric acid, which has antioxidant property. Aurum hydroxide improves immunity, and allantoin promotes wound healing. Hence, administration of a dosage of cow urine helps in regulating an appropriate balance of the above mentioned substances, thus curing incurable diseases. Cow is hence considered a live dispensary; a store house of medicines [5].

**Table: 01**

**Constituents of Cow Urine and Their Effects**

| Substance present in Cow Urine | Positive effects on the human body |
|---|---|
| Ammonia; $NH_3$ | Helps in stabilising the three properties: bile, mucous and air of body. Also improves blood formation |
| Aurum Hydroxide; AuOH | It has a germicidal nature; AuOH is also antibiotic and anti-toxic, thus increases immunity power of the body |
| Calcium; Ca | Imparts basic strength to bones, and has also germicidal power with blood purification improvement, |
| Carbolic acid; HCOOH | It has a germicidal nature, preventing the growth of germs and is also able to prevent gangrene. |
| Copper; Cu | Improves the absorption power of magnetic rays and also controls build up of excessive fats |
| Creatinin; $C_4HgN_2O_2$ | Improves action against germs. |
| Enzymes | Improves digestion and increases immunity |
| Hipuric acid; CgNgNox | Helps in the removal of toxins through urine |
| Iron; Fe | Maintains balance and helps in production of red blood cells & haemoglobin. |
| Lactose; $C_6H_{12}O_6$ | Helps in strengthening the heart; decreases nervousness. |
| Manganese; Mn | It imparts better germicidal power. Avoids decay leading to gangrene as it stops growth of germs. |
| Nitrogen; N2 ,NH2 | Prevents abnormalities in blood and prevents the effect of toxins, its diuretic nature makes it to be a natural stimulant of urinary track, and activates the kidneys. |

ISSN(Online) : 2319-8753
ISSN (Print) : 2347-6710

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 5, Issue 9, September 2016

| | |
|---|---|
| Phosphate; P | Helps in preventing urinary tract stone formation. |
| Potassium; K | Cures hereditary rheumatism. Increases appetite. Removes muscular weakness and laziness. |
| Sodium; Na | It helps in purification of blood as NaCl decreases the acidic content of blood; also has an antacid nature. |
| Sulphur; S | Improves bowel action of the intestines. Cleanses blood. |
| Urea; $CO(NH_2)_2$ | Improves urine formation and exhalation action. Also has a germicidal action. |
| Uric Acid; $C_5H_4N_4O_3$ | Prevents the swelling of heart inflammation. It is diuretic therefore destroys toxins |
| Vitamins A,B,C,D,E | Vitamin B is active ingredient for energetic life and prevents the effects of nervousness and thirst. It also helps in boosting the bone strength and reproductive power of the individual. |
| Water; $H_2O$ | It maintains fluidity of blood, and helps in controlling the body temperature. |
| Other Minerals | Help in boosting immunity power of the body. |

Synthetic antibiotics are widely used for the treatment of many microbial infections and diseases. Usage of such enormous quantity of antibiotics should have eliminated most of the infectious diseases in the world. But the scenario is totally opposite as infectious diseases are ever increasing day by day. The main obstacle noticed in the use of these antibiotics is that the bacteria acquire a genetic ability of resistance towards these antibiotic drugs, termed as 'Host Resistance', and these drugs also have an adverse effect on the host. Hence, many natural products have been explored to combat such problems [6, 7].

Bio enhancing is one of the many properties of cow urine. It promotes and increases the effectiveness of antimicrobial, antifungal, and anticarcinogenic drugs. It also leads to an increase in the activity of gonadotropin releasing hormone conjugate with bovine serum albumin and zinc [6, 8].

The qualitative study of cow urine has shown to contain calcium salts, carbolic acid, chlorine, copper, creatinine, enzymes, hormones, gold acids, iron, lactose, magnesium, manganese, minerals, nitrogen, phosphate, silicon, sodium, sulphur, acids like citric, maleic, tartaric, succinic, and Vitamins: A, B, C, D, E. Most of the illness in human beings are primarily due to either a lack or excessiveness of the above substances in the body. As cow urine consists of all these chemicals in appropriate proportions required by the human body, intake of cow urine maintains a proper balance of these chemicals, thus eliminating many diseases [2, 6]. The antiseptic and antimicrobial properties of cow urine are due to the presence of minerals, hormones, salts, and enzymes in it.

Cow urine exhibits the property of "Rasayana tattwa", responsible for modulating various body functions, providing immunity. It augments B and T lymphocyte blastogenesis and Ig G, Ig A, and Ig M antibody titers in the human body. It also increases the secretion of Interleukin 1 and Interleukin 2, Phagocytic activity of macrophages, which is thus helpful in the control and prevention of infections[6, 9, 10, 11]. Researchers have deciphered to the fact that cow urine is an extremely effective antimicrobial agent against a broad spectrum of Gram negative and Gram positive bacteria as well as against some drug-resistant bacteria. It also works as a bio-enhancer for some antimicrobial drugs. It has antifungal, anthelmintic, antineoplastic action, which is useful in controlling hypersensitivity reactions and in the treatment of numerous other diseases, ultimately increasing the life-span of a person. Recent researches have shown that cow urine is a very good immune-enhancer. Therapeutic properties of cow urine have been thus validated by modern science also [1, 12].

## IV. MECHANISM OF ACTION OF COW URINE

The prominent antimicrobial/germicidal/antifungal property of cow urine is due to it containing different volatile and non-volatile components like Urea, creatinine, Aurum hydroxide, phenol, carboxylic acid and salts of calcium and manganese. This germicidal property is even more enhanced due to the presence of different amino acids and urinary peptides which are instrumental in increasing the bacterial cell wall and surface hydrophobicity [12]. It has also been observed that fresh cow urine is more effective as an antimicrobial agent than its distillate due to the presence of higher concentration of phenol. The antioxidant property of Uric acid and allantoin present in early morning voided cow urine is maximum, which is useful in the treatment of cancer. This early morning voided urine has been observed to be more sterile and has more micro and macro nutrients, enzymes, and other components, which render it to be most effective. Cow urine has been found to reduce apoptosis in lymphocytes, thus increasing their rate of survival. This action is

ISSN(Online) : 2319-8753
ISSN (Print) : 2347-6710

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 5, Issue 9, September 2016

attributed to the free radical scavenging activity of the components, which ultimately are helpful in slowing down the process of aging [13, 14, 15].

Cow urine of the Indian pure breed cow is the most effective for therapeutic applications. It has got immune-modulatory effects in the host body against various infections. Research has been carried out on cow urine distillate and has found to have immune modulation in mice. It has been found that it helps to enhance T-cell and B-cell growth, and also enhances the level of IgG. Cow urine distillate has synergistic properties with antibiotics, antifungal and anticancer drugs. Hence, CUD acts as an bio-enhancer. It has been found that CUD increases B and T lymphocyte blastogenesis. This study led to the investigation of effect of CUD on humoral and cell mediated immune response against NDV vaccination [16].

Similar research has been carried out with cow urine to upregulate lymphoblastogenesis [17]. The study was planned to investigate the blastogenic activity of lymphocytes and effect of in-vivo cow urine therapy on it in order to evaluate their potential to promote a protective immune response against disease. This therapy is not only boosting up the immune system of the living creatures but it is also eco-friendly as there are no chances of pollution or discharge of harmful chemicals into the environment.

## V. ACCEPTANCE OF COW URINE THERAPY OVER THE GLOBE

Rural and tribal residents in different pockets in the world have adopted cow urine therapy in different modes suitable to their life-style and the environment. Sudan is a country where illiteracy is very high and the per-capita income is extremely low in absence of proper income sources. Residents are unable to adopt any modes of modern health care; leaving aside the luxuries available to the common public of the world. Hence, they resort to herbs and other locally available products by incorporating it in their diet; and as medicine for any sickness according to the folk practice. The locale tribals have also used cow urine in different forms as medicine. Tribals use fresh cow urine for its mineral, carbohydrates and vitamin content; which helps in replenishing the same in their bodies. Stored cow urine is also used as a medicine, because on long storage, the urine is free from bacteria; and it on the contrary helps to overcome many microbial sicknesses. Cow urine promotes an anti toxic action against cadmium chloride and works as an effective bio-enhancer for Zinc. Tribals of this area prefer a mixture of fresh cow urine and its fermented / stored version as a source of nutrition as it contains all the ingredients required for the body, and at the same time offers disease resistance power to the body [18].

Prominent natural health care centres in Indore, India are Cow Urine Therapy and Research Centre and Swaarnim Naturscience Limited led by a leading cow urine therapist, Mr. V. K. Jain, are pioneering institutions to propagate cow urine therapy. These Centers provide vital and cheap or free treatment to thousands of populace. Cow has been central to Indian culture for thousands of years and our ancestors were highly aware of the therapeutic qualities of cow urine and were proficient at administering it to alleviation and prevention of many diseases. Through painstaking and exhaustive research, Mr Jain has rediscovered cow urine to be a veritable panacea. He has found that cow urine has natural disinfectant and antiseptic properties. Cow urine is truly unique as urine from any other species of life is considered impure. The consumption of cow urine as medicine is a time-honored tradition that finds its place in Indian history. The Government of India, the patent office awarded Mr. Virendra Kumar Jain a patent (Patent No.189078) for his discovery and innovation of cow urine therapy and therapeutic ayurvedic composition.

Gomutra is also marketed as a health drink. In 2009, Kanpur Gaushala Society (KGS) in Kanpur released a product called Goloka Pay, a cold drink containing 5% distilled cow urine. It was released in two flavours, orange and lemon. It also contained herbs like tulsi, shankhpushpi and brahmi. Also in 2009, the Cow Protection Department of Rashtriya Swayamsevak Sangh in Haridwar announced their plans to release a similar product as an alternative to cola. Cosmetic products like soaps and shampoos are also made from gomutra.

## VI. RESTRAINMENTS TO COW URINE THERAPY

One of the main reasons of people not accepting cow urine therapy is its strongly repulsive pungent odor. The taste of cow urine is slightly sweet and has pH in the range of 8.0 to 10.0. Also it has been observed that some cows carry pathogenic bacteria due to the poor quality of food and garbage they graze on. These pathogenic bacteria are discharged from the body of the cow with the urine. Consumption of such urine for medicinal purpose has been found to be

ISSN(Online) : 2319-8753
ISSN (Print) : 2347-6710

International Journal of Innovative Research in Science, Engineering and Technology

*(An ISO 3297: 2007 Certified Organization)*

**Vol. 5, Issue 9, September 2016**

counter-beneficial. Research is being done for the removal of the odor and the pathogenic bacteria from urine before it is prescribed for medicinal usage, and Arka-kalpana is a process that is followed for this purpose [19].

## VII. CONCLUSION

Cow urine has immense antimicrobial power to annihilate a range of microorganisms and bacteria. All microorganism generated afflictions are thus annihilated. It imparts disease resistance power to humans and creatures. All those components which are vital role for equalizing the deficiency of those nutrients in our body, and are a must for maintaining human health, are present in cow urine. Cow urine has shown remarkable antimicrobial activity against the pathogenic bacteria, for which it can be selected for further studies to isolate bioactive natural constituents that may address to meet the therapeutic needs. Such identification and segregation of different active operator chemicals available from natural sources is the main need of today as proper and accurate prediction of extra-ordinary drug discovery will give good results in future in the field of further drug development. But invivo studies on these cow urine preparations are necessary and should seek to justify its potential as antimicrobial agent.Last few decades have witnessed a tremendous development in cow urine therapy because of the increase of drug resistant microbes to allopathic medicines. Resistant strain development towards medicine makes the future of an antimicrobial drug uncertain. Plant and animal products contain valuable resources of nature necessary for the upkeep of human health. Hence, cow urine has proved to be extremely effective in the treatments of various microbial afflictions.

## REFERENCES

[1] E. Jerald and S. Edwin, “Antioxidant and Antimicrobial Activities of Cow Urine”, Global Journal of Medicinal Plant Research, Vol. 5, No. 4, pp. 649-651, 2008.
[2] M.L. Pathak and A. Kumar, “Cow Praising and Importance of Panchgavya as Medicine”; Sachitra Ayurveda, Vol. 5, pp. 56-59, 2003.
[3] P. Mishra, Article: “Mother Cow and Panchgavya”, Bhaktivedanta Swami Goshala (Iskon Vrindavan); Explorer, Article: 39-40, 2005.
[4] D.D.Gosavi, D. Sachd ev and K. Salwe, “Immunomodulatory and Antioxidant Effect of Gomutra Ark in Rats”, Journal of Mahatma Gandhi Institute of Medical Sciences, Vol. 16, No. ii, pp. 37-41, 2011.
[5] N.K. Jain, V.B. Gupta, R. Garg and N. Silawat, “Efficacy of Cow Urine Therapy on Various Cancer Patients in Mandsaur District, India”, International Journal of Green Pharmacy, Vol. 10, No. 4, pp. 29-39, 2010.
[6] F.P. Minocheherhomji, “Innovative Naturopathy: Cow Urine and Herbal Extracts: A Trail Blazer Remedy”, Laxmi Book Publications, Solapur, India, pp. 10-11, ISBN No.: 978-1-329-40071-9, 2015.
[7] C.P. Shah, D.M. Patel, P.D. Dhami, J. Kakadia, D. Bhavsar, U.D. Vachhani, M.N. Trivedi and V.J. Joshi, “In vitro Screening of Antibacterial Activity of Cow Urine Against Pathogenic Human Bacterial Strains”, International Journal of Current Pharmaceutical Research, Vol. 3, No. 2, pp. 91-92, 2011.
[8] J.A. Ganaie and V.K. Shrivastava, “Effects of Gonadotropin Releasing Hormone Conjugate Immunization and Bioenhancing Role of Kamdhenu Ark on Estrous Cycle, Serum Estradiol and Progesterone Levels in Female Mus Musculus”, Iranian Journal of Reproductive Medicine, Vol. 8, No. 2, pp. 70-75, 2010.
[9] G.K. Randhwa, “Cow Urine Distillate as Bio Enhancer”, Journal of Ayurveda and Integrate Medicine, Vol. 1, No. 4, pp. 240-241, 2010.
[10] S. Ganguly and A. Prasad, “Role of Plant Extracts and Cow Urine Distillate as Immunomodulators”, International Journal of Pharmaceutical Sciences and Research, Vol. 2, No. 7, pp. 1781-1785, 2011.
[11] R. Tiwari, K. Karthik, R. Rana, Y.S. Malik, K. Dhama and S.K. Joshi, “Panchgavya: Immune-Enhancing and Therapeutic Perspectives”, International Journal of Pharmacology, Vol. 12, No. 3, 262-271, 2016.
[12] G.K. Randhawa and R. Sharma, “Chemotherapeutic Potential of Cow Urine: A Review”, Journal of Ethnopharmacology, Vol. 4, No. 2, pp. 180-185, 2015 Apr-June.
[13] S.L. Shaw, F.M. Mitloehner, W. Jackson, E.J. Depeters, J.G. Fadel and P.H. Robinson, “Volatile Organic Compound Emissions from Dairy Cows and Their Waste as Measured by Proton-Transfer-Reaction Mass Spectrometry”, Environ Sci Technol., Vol. 41, pp. 1310–6, 2007..
[14] G.S. Achliya, V.S. Meghre, S.G.Wadodkar and A.K. Dorle, “Antimicrobial Activity of Different Fractions of Cow Urine”, Indian J Nat Prod., 2004;20:14–6.
[15] M. Badadani, S.V. SureshBabu and K.T. Shetty, “Optimum Conditions of Autoclaving for Hydrolysis of Proteins and Urinary Peptides of Prolyl and Hydroxyprolyl Residues and HPLC Analysis”, J Chromatogr B Analyt Technol., Biomed Life Sci. 847, 267-274, 2007.
[16] S. Ganguly S, “Cow Urine Distillate is Regarded as Promising Immunomodulatory Supplement for Broiler Diet: A review”, Unique Journal of Ayurvedic and Herbal Medicines, Vol. 01, No. 01, pp. 3-4, 2013.
[17] Prabhakarkumar, G.K. Singh, R.S. Chauhan, D.D. Singh and L.K. Singhal, “Cow urine Upregulates Lymphoblastogenesis in Chicks”, ISAH, Warsaw, Poland, Vol. 2 pp. 90-92, 2005.
[18] A.A. Hassan, G.O. Kashka and M.K. Sabahelkhier, “Cow Urine (TEI ORKEY) Uses by Ghulfun Tribe (ANCHO) in Noba Mountains, State of Southern Kordofan, As Therapy and Food Additive”, ARPN Journal of Science and Technology, Vol. 3, No. 11. pp. 1057-1059, 2013.
[19] N. Sachin, A Study of Efficacy of Gomutra Arka in Prevention of Atistuhaulya w.s.r. to Obesity”, Dissertation submitted to Rajiv Gandhi University of Health Sciences, Bangalore, Karnataka, in partial fulfilment for the degree of Ayurveda Vachaspati (M.D. Ayurveda) in Swasthavritta: pp. 58-60, 2010.