

Chapter 35

Difference between Homeopathic and Herbal Medication in Humans and Animals

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ABSTRACT

Homeopathy is sometimes mistaken for herbal remedies and holistic treatment. The latter is especially problematic in cases when botanicals used to make homeopathic medications are also given the same vocabulary. But homeopathy is different in terms of toxicity as well as a therapeutic paradigm, which has significant ramifications for application and further study. Using plants, lichens, algae, and fungi to influence the body is known as herbalism. It originated in Asia, Europe, and America and spread worldwide with the earliest human settlers. Herbal medicine makes use of a wide range of preparations, including tinctures, teas, powders, elixirs, essential oil, meals herb-infused honeys, herbal vinegar, and several topical applications. The majority of homeopathic cures are made up of tiny amounts of substances that, given a physiological quantity, would produce the same signs as the illness. Treatments of homeopathy are made from highly diluted natural components. Herbs such as Arnica montana and poisonous ivy are used in homeopathic preparations, along with animal products like snake venom and minerals like phosphorous. These are then turned into tinctures, topical treatments, or sublingually absorbed sugar pellets.

KEYWORDS

Homeopathy, Herbal medicines, Natural component, Topical treatment, Illness

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INTRODUCTION

Recent years have seen a rise in the popularity of complementary and alternative medicine, which uses notions that differ from those of modern medicine. Compared to conventional medicine and routine treatment, alternative medicine adopts various concepts. Over the past few years, there has been a rise in demand and popularity for complementary therapies (Chiu and Ho, 2005; Art, et al., 2009; Kardanpour, et al., 2016). Medically based treatments are frequently unsatisfactorily expensive and have little efficacy. Because of this, alternative medicine is more accessible than traditional medicine, requires less expensive laboratory settings, and is safer and more natural. Many herbal remedies, dietary supplements, chiropractic adjustments, and homoeopathic treatments are all considered forms of alternative medicine (Henson et al., 2017). Homoeopathy is one of the therapy modalities that are part of these alternative applications (Hadipour et al., 2011).

Homeopathic Medicines

About two centuries have passed since the Greek terms homeo, meaning pathos and similar, which denotes pain or illness, were combined to create the phrase homoeopathy. Homoeopathy seeks to offer the patient a quick, long-lasting treatment plan using organic techniques that encourage self-healing (Yaramış et al., 2016; Bhardwaj and Misra, 2018). The idea that comparable substances can address comparable issues is one of the fundamental tenets of this approach. This basic premise, which forms the basis of homoeopathy, means that "When a medication is administered to those who are healthy, it generates manifestations comparable to the sickness in those people who are receiving treatment for the illness with this active ingredient (Özçakır and Doğan, 2013).

History

The history of homeopathic medicine is longstanding. According to Yarsan (2015), there is historical evidence of the application of homeopathic principles in Greek inscriptions, Inca, Aztec, Native American, and Egyptian writing systems. Hippocrates treated comparable conditions and was regarded as the founder of medicine about 400 BC. Paracelsus, one of the most important alchemists of the sixteenth century, followed procedures in accordance with this idea (Özçakır and Doğan, 2013; Yarsan, 2015). Özçakır and Doğan (2013) state that the German physician Samuel Hahnemann created homeopathy and documented these ideas in 1796. The first handbook on homeopathy was published in 1826 by Carl Caspari. From 1811 until 1821, Hahnemann gave homeopathic lectures at the University of Leipzig. He relocated to Paris to pursue his medical studies fourteen years later. Following Hahnemann, there were extensive research investigations on homeopathy, with an American scientist named James Tyler Kent recognized as the 19th-century inventor of modern homeopathy (Yarsan, 2015). In Western region of Europe, particularly in the Netherlands, France, England, and Germany, homeopathic treatment is one of the most often utilized modalities both now and in the previous century.

Principles of Homeopathic Treatment

There are three basic tenets that underpin homeopathy. According to Chiu and Ho (2005), these three principles are the minimum dose principle, the only remedy concept, and the similarity principle. By producing a warning and starting the healing process with homeopathic chemicals, homeopathic treatment seeks to trigger responses that will regain the organism's health. By conducting experiments and meticulously documenting the effects of different dosages of drugs on volunteers and himself, Hahnemann was able to discover this principle. In his experiments with homeopathy, Hahnemann employed materials including ivy venom, snake venom (*Lachesis*), table salt (*natrum muriatum*), and head lice (*Pediculus capitis*) (Rijnberk and Ramey, 2007). Hahnemann did not agree with the author's justification for quinine's advantageous benefits in malaria patients, despite translating William Cullen's *Pharmaceutical Science Lectures* into German. The stomach is strengthened by quinine, according to Cullen. The quinine compound was also tested on Hahnemann, who reported that the effects were comparable to those of malaria. The "*Similia similibus curentur*" idea was proposed by Hahnemann in response to this observation (Rijnberk and Ramey, 2007). Pekmezci and Gültiken (2015) state that Hahnemann organized this idea, laid down its foundation, and influenced homeopathy.

Homeopathic Drugs

Herbal, mineral, and animal-based constituents are diluted to create homeopathic medications. According to Yarsan (2015) and Kumari et al. (2016), these include poison ivy, white arsenic, red onion, stinging nettle, arnica (mountain grass), and belladonna. Prescription and manufacturing of homeopathic remedies in accordance with the general symptoms of the patient. Liquid (ampoule, drops) and solid (globule-spheres, ointment, tablet,) homeopathic medicines are available. According to Mathie and Clausen (2014), they can deliver locally, subcutaneously, intramuscularly, orally. Gold, arsenic, phosphorus, zinc, and calcium compounds are components in mineral-based medicines. Herbal remedies such as *Calendula officinalis*, *Arnica montana*, and *Atropa belladonna* are used in homeopathy. Snakes, bees, dog milk, blood, cartilage tissue, umbilical cord and embryo, pus, rabid dog saliva, scabies agents, TB discharges, or diseased tissues like cancer tissue are examples of substances of an animal origin (Yarsan, 2015; Pekmezci and Gültiken, 2015).

Preparation and Administration of Homeopathic Medicines

To make homeopathic medications, raw components of plant, animal, and mineral source are utilized. It is necessary to first transform these raw elements into the main substance. To achieve this, an appropriate vehicle is added to the raw materials—such as alcohol or water—and let to stand. The dissolved components are separated to yield a primary medicinal product, such as a powder, extract, or tincture. The main component is extracted, diluted to make it usable, and then shapes it into pills, ointments, drops, and injectable solutions. By diluting, the principal substance's toxicity and side effects are minimized and the content's dangerous substances are neutralized (Yarsan, 2015; Pekmezci and Gültiken, 2015). The main ingredient is diluted using shaking and successive dilutions. Potentiation is the term for this diluting procedure.

Mechanism of Homeopathic Drugs

There are several suggestions regarding the mechanism of action of homeopathic drugs, however data regarding their therapeutic efficacy are still unclear (Løken, 2001). A process known as potentiation is used to obtain homeopathic drugs. So that just a little portion of the original material remains in the finished product, the primary ingredients are repeatedly diluted and agitated extensively. Homeopaths have shown that a treatment will work better and require fewer doses of medication when the active component is further mixed and diluted. Due to its high internal energy, homeopathic medicine, even in little doses, activates a multitude of bioenergy systems within the body (Pekmezci and Gültiken, 2015). In order for homeopathic remedies to work, the patient's manifestation must align with their recommended course of treatment. Seeking any indications of a different illness should be done for the patient (Pekmezci and Gültiken, 2015).

The Use of Homeopathy in Medicine

Homeopathic remedies reduce post-tooth extraction discomfort, swelling, and bleeding (Karp et al., 2016). For this reason, medications with the names *Arnica montana*, *Hydratis*, *Canadensis*, *Belladonna* and *Calcarea carbonica* are used in different ways to treat dental cavities, gingivitis, aphthous ulcers, and gingival bleeding. While homeopathy can help

patients relax and make the process go more smoothly, it cannot replace dental medical techniques (Kardanpour et al., 2016). When African patients with malaria were treated with the homeopathic medication *natrum muriaticum*, the number of malaria attacks was found to drop. When treating chronic diseases that resolve on their own, homeopathy is more frequently chosen than conventional therapies (Erlewyn-Lajeunesse, 2012). Studies on homeopathic medications in this field have produced encouraging results (Johannes et al., 2013). After three months of treatment, homeopathic medications *Rhus Toxicodendron* and *Ruta graveolens* 5CH are used in the initial stages of breast cancer, shown beneficial results in lowering joint discomfort and involvement (Karp et al., 2016).

The Considerations

When Dispensing Medication When using homeopathic remedies, there are a few things to keep in mind. Prior to receiving homeopathic treatment, the patient should disclose to the homeopathic practitioner all medications that he has taken or intends to take. The patient should inform the homeopathic practitioner if they take any additional homeopathic medications. Certain substances should not be consumed by the patient while receiving homeopathic treatment. Aromatic coffee and essential oils are examples of substances that can adversely impact homeopathic treatment. During homeopathic treatment, it is best to avoid using oral or topical antibiotics, steroids, and opioids.

Advantages and Disadvantages of Homeopathic Treatment

It is entirely safe and non-poisonous to use homeopathic treatments (Santa Rita et al., 2016). Homeopathic medicines have the function of stimulating the organism, which starts the healing process. Children and pregnant women can safely utilize homeopathic remedies without experiencing any negative side effects. Furthermore, when combined with other forms of treatment, they do not exhibit any negative side effects. Natural substances are used to make homeopathic medicines. They function in tandem with the body's natural processes and immune system. According to Yarsan (2015), homeopathic medicines do not induce addiction and provide relief from all symptoms by targeting the underlying cause rather than the symptoms alone. Homeopathic medicine uses the body's natural healing ability to promote the health of the organism. The minimum dose rule guides the preparation of homeopathic medications. I.e. these do not induce any kind of addiction in the body (Kumari et al. (2016). Both benefits and drawbacks might arise from homeopathic medicine. As far as alternative therapies are concerned, homeopathy is the costliest. Side effects could arise if they are used excessively or uncontrollably (Orjales et al. (2016).

Importance of Herbal Products in Animal Husbandry

Plants have been utilized for thousands of years for medical and health purposes. In many ancient medical systems, plants are always the primary source of medicine or therapeutic approach. India has an abundance of therapeutic plants, and many medical traditions, including Ayurveda, Siddha, and Unani, employ plant extracts to treat a variety of illnesses. Ayurveda is an age-old Indian medical system that primarily uses herbal remedies to treat and prevent a wide range of illnesses and cancers (Pandey et al., 2013). Ever since the beginning of time, plants have served as both food and medicine for both animals and birds. The ability of animals and birds to naturally heal themselves with herbs is known as zoo pharmacognosy, and competent humans can also practice this age-old skill to this day (Dhama et al., 2015). Approximately 75% of plant-based medicinal substances used globally are used in traditional/folk medicine (Sen and Chakraborty, 2017). Plants have been used for animal health prevention and recovery as well as grain conservation for the past ten years, largely due to the development of organic livestock production systems, drug resistance, high input costs, and worries about toxic residues in food (Escosteguy, 2014).

Traditional Medicines in Asia and Africa

For their primary medical requirements, 80% of people in Asian and African nations turn to traditional medicine. According to Wachtel-Galor and Benzie (2012), around 25% of contemporary medications are derived from plants that were originally used traditionally. With almost 20,000 species of medicinal plants, India is home to one of the largest collections of natural remedies worldwide. Nevertheless, only 7,000–7500 of these species have been employed by various medical societies to treat various illnesses (Pandey et al., 2013). Approximately 391000 plant species are thought to exist on Earth. (National plant association of the world, 2016/report). According to estimates, between 35,000 and 70,000 plant species have been utilized medicinally. Herbal plants are used to treat illnesses as well as to improve wellness. Herbs are used to treat a variety of illnesses, including acaricidal and anthelmintic infections. They may also be utilized in the treatment of bovine mastitis, as well as in gynaecological and surgical operations (González et al., 2011). The nutritional components found in plants that are crucial for animal health care are called secondary bioactive compounds or metabolites. They increase cattle productivity and reduced pollutant levels in the environment. (González et al., 2011; Chakraborty and Pal, 2012).

Importance of Employing Herbal Items in the Development of Livestock

Herbs utilized to make the items enhance wellbeing without having any negative effects. Herbal products have many benefits over non-herbal items, which makes the supplements or medications very beneficial. Herbal remedies are readily available, more effective for chronic health conditions, and well-tolerated. Since herbal growth promotants don't leave

residues in animal products, they are safe for ingestion by humans. In the long run, herbs are also less expensive and could result in decreased feed expenditures (Alimon, 2012). Various plant extracts, herbs, and spices have the ability to stimulate digestion and appetite. Various secondary metabolites produced by plants function as defense mechanisms against pathogenic microbes, predators, and physiological and environmental stresses (Mirzaei-Aghsaghali, 2012). In addition to being used in conjunction with other supportive herbs, the natural antibacterial, anti-inflammatory, anti-oxidant, and immunostimulant properties of the herbs and spices can be used. (Mirzaei-Aghsaghali, 2012; Kumar et al., 2014). Herbs' active compounds function in harmony and synergy when used as entire plants or leaves, and when mixed with other herbs, they naturally produce the intended effects. But when it comes to contemporary medicine, this is untrue (Alimon, 2012).

Herbs as Feed Additives

Herbs are plants that bloom, are not woody, and are not persistent, but spices are herbs that have strong flavor and aroma. These plants, which are classed as feed additives by Windisch et al. (2008), are phytogetic plants that contain chemicals that cause physiological responses in animals. A greater requirement in search of natural and safe feed additives to raise farm animal output was brought about by consumer awareness raising and the prohibition on the use of nutritional antibiotics (FrAnKIČ et al., 2009). Phytogetic feed additives (PFA) are natural pharmaceuticals made from plant extracts, herbs, and spices that are fed to farm animals. PFAs enhance an animal's ability to absorb nutrients, digest food, and eliminate infections in its digestive system. (Alloui et al., 2014). According to Kiczorowska et al. (2017), these feed additions include herbs, spices, and the products derived from them, as well as essential oils. The different plant secondary compounds (PSC) and metabolites that have positive impacts on animal health and productivity are known as phytobiotics, or botanicals (Stevanović et al., 2018). By boosting the physical aspects of the hens' intestinal ecology and strengthening their immune systems, these compounds were thought to be crucial in fortifying the animals' defenses. Therefore, to promote growth and provide health advantages, nutritive antibiotics and other feed additives target the gut bacteria (Singh and Gaikwad, 2020). According to Upadhaya and Kim (2017), feed additives have a variety of functions, including growth enhancer, anthelmintic, antioxidant, antibacterial, and immunological modulator. According to reports, the action of phytobiotics can improve production, increase feed intake, and stabilize the microbiota of an animal's gastrointestinal tract while strengthening its resistance (FrAnKIČ et al., 2009; Yang et al., 2009; Kumar and Kumar, 2013).

Importance of Herbs in Ruminants

Strong antibacterial, antiparasitic, antiprotozoal, and anti-inflammatory qualities can be found in plant extracts, particularly in essential oils and saponins. According to Tajodini et al. (2014), these organic substances regulate ruminal fermentation to increase animal output in ruminants and to optimize nutrient utilization. Ruminant productivity is increased by rumen modifiers, which alter digestion and boost protein retention and energy without lowering feed intake. According to Kumar et al. (2014), Alkaloids, flavonoids, saponins, tannins, phenolics, terpenoids, essential oils, and piperine are examples of bioactive plant secondary chemicals that are additions that enhance protein metabolism and reduce methane production. Additionally, they reduce nutritional stressors like bloat, which promotes rumen fermentation and, in turn, raises animal well-being and productivity. Therefore, animal production, feed additives can be used to improve feed intake, metabolism, and feed utilisation efficiency that is both cost-effective and environmentally beneficial (Singh, 2015). However, there is evidence that certain essential oils lower the number of bacteria that produce ammonia, the rate at which amino acids are deaminated, and both of these rates. Thus, by selectively modulating specific microbial species, Ruminal fermentation is managed with the use of natural plant extracts. (Tajodini et al., 2014).

Importance of Herbs in Monogastric Animals

In animals with monogastric feeding systems, feed additives are used to boost immunity, reduce pathogen counts, encourage the formation of beneficial gut flora, and enhance digestive efficiency. (De Lange et al., 2010). PFA has been shown by some authors to have positive effects on Increasing the crude protein digestibility in monogastric animals can increase nutritional digestion. (Emami et al., 2012; Li et al., 2012). This is because PFA stimulates saliva and bile secretions and enhances enzyme activity, all of which improve animal health and lower feed costs. PFA increases intestine absorptive capacity through increasing the villus's height, crypt depth, and surface. In monogastric animals like pigs and poultry, essential oils help the animal's immune system, reduce pathogenic stress in the stomach, enhance the secretion of digestive juices and nutritional absorption, and give antioxidant effects. (Zeng et al., 2015).

Herbs used Medicinally to Enhance Cattle Reproduction

The main factor influencing a stable and profitable animal production system is the animal's reproductive efficiency. One of the most important issues reducing dairy animals' productivity and output is reproductive diseases (Giri et al., 2023). Farmers in the cattle industry suffer significant financial losses as a result of reproductive process failure. Even today, a variety of reproductive diseases are efficiently treated using herbs, which have been used for ages to cure reproductive illnesses. Numerous herbs have amazing therapeutic qualities that can treat a variety of animal reproductive diseases, including anestrus, abortions, endometritis, retained placenta, and repeated breeding (Kumar et al., 2018). It has already been demonstrated that a small number of these plants, which contain secondary metabolites (PSM), are highly successful

in causing estrus in postpartum anestrous cows. Certain secondary metabolites have the capacity to control the synthesis of ovarian hormones or scavenge reactive oxygen species (ROS), which makes them antioxidants. These characteristics are in charge of the therapeutic effects on infertility disorders (Mbemya et al., 2017).

Herbal Products as Livestock Immune-boosting Agents

Immune systems benefit from spices and herbs high in flavonoids, vitamin C, and carotenoids. Immunostimulatory plants boost phagocytosis and promote the production of interferon by enhancing the function of lymphocytes, macrophages, and natural killer cells (FrAnKIČ et al., 2009). Curcumin, it is present in *Curcuma longa* and boosts CD4 (+) T and B lymphocytes in the mucosa. Which affects lymphocyte-mediated immunological activities (Khan et al., 2012). Numerous synthetic immunomodulators are available on the market, but with varying degrees of negative effects. Plant immunomodulators that are conventional are less expensive and safer. Several herbs with immunomodulatory qualities are utilized extensively in the poultry industry, including ashwagandha (*Withania somnifera*), neem (*Azadirachta indica*), and guduchi (*Tinospora cordofolia*) (Dhama et al., 2014).

Plants with Bioactive Secondary Products for Cattle Health

Bioactive chemicals are additional nutrients that are usually found in trace amounts in food. According to recent research, extracts from medicinal plants that have lower concentrations of secondary metabolites from plants can improve the performance of ruminants in one or more ways (Mirzaei and Venkatesh, 2012). As a result of additional research into these therapeutic plants, numerous secondary metabolites that are now well-known medicines have been isolated. These secondary metabolite characteristics are used as the primary source for new medication discovery. (Dias et al., 2012). Here are a few well-known and well-known examples:

1. An anti-inflammatory agent. Salicin is extracted from the *Salix alba* L. tree's bark, is the source of acetylsalicylic acid, or aspirin.
2. The base of the painkiller codeine, diacetylmorphine (heroin), is produced by boiling the alkaloid morphine from the *Papaver somniferum* (Opium poppy) plant in acetic anhydride.
3. Digitoxin is a heart drug that targets all aspects of cardiac function. It is a cardiotonic glycoside derived from the foxglove plant *Digitalis pupurea* L. Digitoxin enhances cardiac contractibility.
4. Quinine is a drug made from the bark of *Cinchona succirubra* Pav. that is used to treat fever, malaria, indigestion, cancer, and throat and mouth ailments.
5. Pilocarpine is a medication made from the *Pilocarpus jaborandi* plant (Rutaceaceae) that is used to treat glaucoma.

Role of Herbal Medicines in Humans

Around the world, a plethora of pharmaceutical enterprises had emerged, producing a wide range of natural treatments derived from leaves, barks, stems, fruits, seeds, flowers, roots, and medicinal plants. It contains a variety of foods, such as bitter kola, kola nuts, and edible mushrooms. These formulations, which come in powder, paste, balm, cream, and other forms, are used to treat a variety of disease conditions at different stages, including diabetes type 1 and type 2, high blood pressure, trypanosomosis fibroid, ulcers, cancers, heart disease, migraines, and wound healing aids derived from medicinal plants (Ahmad et al., 2021).

A Formulation of Medicinal Plants Intended to Combat COVID-19

To support the applications of medical plants and herbs, Indian scholars have used a variety of medicinal plants, such as *Ocimum sanctum* L. 2 leaves, *Cinnamomum verum*, stem barks, *Zingiber officinale* Roscoe rhizomes, and *Piper nigrum* L. fruits. Brand names for these formulas include "AYUSH Kwath," "AYUSH Kudineer," and "AYUSH Joshanda." The antiviral and immunity-boosting qualities of these make them a viable option to combat the Covid-19 epidemic (Shaba, 2022). As a result of the introduction of genetically engineered coronavirus (by psychopaths), which up until now has always appeared in conjunction with a regular flu virus with a mere 2% death rate, it is frequently noticeable as it is during the winter season in temperate nations or regions. These herbs have been shown to strengthen immunity (Shaba, 2022) and are effective treatments for various.

Pain Killers

Humans utilize aspirin, morphine, and chemotherapy extensively to reduce pain, particularly during surgery; these medications are entirely derived from medicinal plants. The following is a partial list of notable medicinal plants that are used both in households and by the pharmaceutical industry to formulate various medications in various forms for the prevention and treatment of specific medical diseases (Sharma et al., 2021).

1. Turmeric
2. Ginger
3. Feverfew
4. Onion
5. Ginger
6. Ginseng

7. The golden seal
8. Thyme
9. Onion
10. Kalmegh

Native Americans Use Medicinal Plant to Treat African Trypanosomosis in Humans and Animals

Trypanosomosis, a zoonotic blood protozoan illness that is one of the neglected tropical diseases that affects individuals in many countries of the world, including Africa, Asia, and Latin America, is treated with a variety of medicinal plants. This material is derived from discoveries that have surfaced in the previous few years, traditional medicine, and our interactions with the community. The list of therapeutic plants that our research team has discovered, examined, and validated is shown below. We have also identified active secondary metabolites, purified the isolated compounds, and, to some extent, determined the structural elucidations of these compounds against trypanosomosis.

1. Indian-species *Emblica officinalis* fruits
2. Fruits of the Indian species *Terminalia chebula*
3. Fruits of the Indian species *Terminalia belirica*
4. Leaves of the Indian species *Achillea millefolium*
5. Leaves and stems of *Vitex negundo* (Indian species)
6. Leaves of the Indian species of *Centella asiatica*
7. Rhizomes of *Zingiber officinalis* (Indian specie)
8. The leaves, seeds, fruits, and root of *Moringa oleifera*

Medicinal Plant Use for Treating Intestinal Worms

Similarly, intestinal worms, nematodes, cestodes, and trematodes are treated using some of the therapeutic plants. One such plant is *Azadirachta indica*, better known as neem, which our ancestors used to treat intestinal worms. Several neem plant parts, including the leaves, stems, fruits, root bark, and root, have been shown to have varying degrees of antihelminthic activity after screening and validation from a scientific perspective. Additionally, *Swartzia madagasariensis* (Yawalogi) and *Picria fel-terrae* Lour have been verified in labs or by the community to be free of intestinal worms, respectively (Shaba, 2022).

Herbs and Medicinal Plants to Treat of Wounds

Since the ancient time, people have used herbs and medicinal plants to cure wounds. A few of the numerous plants and herbs utilised for medicinal purposes are *Curcuma longa*, *Aloe vera*, and *Centella asiatica*. The bodily system's well-documented wound healing process includes the progressive reduction of inflammation, a state often triggered by wounding and, ironically, the first step of healing. The next step is mature granulation of the affected tissue, which speeds up wound healing. Many scholars from around the world have clarified these mechanisms (Shivanand et al., 2010). Incision, excision, contraction of the wound site by reducing its size, epithelialization, and histological findings that suggest regeneration, fibroblast formation, and angiogenesis to complete the process are all part of the wound healing process in the animals used in this study. (Shaba, 2022; Lilly, 2023).

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