

Study on Tibetan Medicine Five-Herbs Musk Pill

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Abstract: Five-Herbs Musk Pill (the pill herbs are five medicinal materials mainly musk), as a widely used drug, aims at promoting and popularizing in clinical practice, as well as providing a clear explanation of the entire process of preparation and dispensing. In this paper, we analyze and describe clinical and pharmaceutical processes from a historical perspective. The medicinal materials and preparation process of the Tibetan medicine Five-Herbs Musk Pill are simple and inexpensive, widely used in clinical practice, and have significant effects. Therefore, this article provides a clear explanation of the entire process. Experimental results show that many drugs have yet to be discovered and applied in the four medical classics of Tibetan medicine, so our responsibility is to promote drugs with significant therapeutic effects in clinical practice according to the needs of the times.

Keywords: Five-Herbs Musk Pill; Pharmacodynamics; Anti-inflammatory

1. Introduction

The cultural accumulation of Tibetan medicine during the Zhuang Zhong Bonismo and the Btsan Po periods has formed a unique and distinctive medical system with its ethnic characteristics. With the continuation of COVID-19 in recent years, the research and development of infectious diseases and therapeutic drugs are of great practical significance. The main drugs used in Tibetan medicine to treat viruses and infectious diseases are Nine-Herbs Maoqiuyou Pill, Ten-Herbs Maoqiuyou Medicinal Powder, Twenty-Nine-Herbs Qianghuo Medicinal Powder, Six-Herbs Broadleaf Qianghuo Medicinal Powder, Five-Herbs Musk Powder, Luojinma, Hei Jiu Pill. Five-Herbs musk is a drug that has insecticidal, detoxifying, analgesic, epidemic prevention, and anti-plague effects. Studying this type of drug is of great significance for epidemic prevention, wound anti-inflammatory, and virus killing.

This ancient wisdom laid the theoretical foundation of Tibetan medicine and radiated new vitality and vigor in the face of global health challenges such as COVID-19. With the advancement of modern technology, more and more researchers are using advanced biotechnology methods to deeply explore the effective ingredients and mechanisms of action in Tibetan medicine, striving to combine the valuable experience of traditional Tibetan medicine with modern medical technology and develop safer and more effective antiviral drugs and treatment plans. At the same time, the unique theoretical system and treatment methods of Tibetan medicine also provide new perspectives and ideas for the global public health system. For example, the concept of "treating diseases before they occur" emphasized by Tibetan medicine is to prevent diseases by regulating the human body's internal environment and enhancing one's immunity, which coincides with the "preventive medicine" in modern medicine. Therefore, combining the prevention concept of Tibetan medicine with modern medical technology is expected to play a greater role in preventing and controlling infectious diseases.

During the era of Nyatri Tsanpo, one of the six doubts raised by Zilagam Yue stated that where there is poison, there is also medicine. Subsequently, the Dunhuang medical scrolls mention a large number of poison-making techniques and antidotes, as mentioned in the existing medical scrolls P and T.1288: if one unknowingly consumes meat poisoned with a poisoned arrow and is unaware of its effects, burning the hair of the black crow and the rock goat, mixing it with white mustard seeds and the loose feathers of the Tibetan Eared Pheasant, and drinking the mixture with water will be effective [1]. These narratives demonstrate the extensive use of musk and anti-inflammatory medications in poison-making techniques and antidotes. Not only that, in Chapters 47 and 78 of "The Tibetan Medical Classic of the Moon King" (or "Yue Wang Yao Zhen"), it is mentioned that "the nature of parasitic diseases is attributed to internal factors such as Long, Chi Ba, and Pei Gen, while external factors are related to digestion and indigestion." [2] Moreover, "Long-type parasitosis can be treated by mixing costus root, emblic myrobalan, musk, and other herbs with sugar. Parasites in teeth or bones can be treated by using Tibetan

calamus, costus root, asafoetida, musk, and other herbs to make suppositories." Based on this information, parasitic diseases and medicinal herbs such as Tibetan calamus, Costus Root, Asafoetida, and Musk have been widely used [3]. The "Yellow Book of Bichi" also mentions that there are five types of infectious diseases: demonic type, Long type, Chiba type, peganum type, and comprehensive type. [4] Before the compilation of the Four Medical Tantras, there was already a profound understanding of painful diseases or parasitic diseases in medical classics. Herbs such as Tibetan calamus, Costus Root, musk, Terminalia chebula, and black crowberry in the Five-Herbs Musk Pill were all used in clinical treatment. However, the formula for the Five-Herbs Musk Pill itself had not yet been created.

The Five-Herbs Musk Pill, also known as the Five-Herbs Qingpeng Pill, is a widely used medication in clinical practice. It has excellent anti-inflammatory and analgesic effects on inflammatory diseases caused by various reasons and can be taken internally or applied externally. It is used independently in areas such as insecticide, anti-inflammation, and pain relief for various diseases, and when combined with other medications, it is applied to a wide range of disease treatments. It is used independently in areas such as insecticide, anti-inflammation, and pain relief for various diseases, and when combined with other medications, it is applied to a wide range of disease treatments.

2. A Comprehensive Analysis of The Five-Herbs Musk Pill

The Five-Herbs Musk Pill is primarily composed of musk (10g), Terminalia chebula (300g), black crow (300g), costus root (100g), and Tibetan calamus (60g). [5] This formulation originated from the "Four Medical Tantras," a renowned Tibetan medical text compiled by Yuthok Yundrung Gonpo, a famous Tibetan physician in the 8th century. The formula and its functions recorded in this book have been used continuously up to the present day, with a practical application history spanning over a thousand years. The "Four Medical Tantras" states, "For dispelling cold, the pill should first use monkshood. Musk, costus root, calamus, and Terminalia chebula are combined with the heat of the heart blood, bones, tendons, and muscles. These herbs are prepared with the urine of a child to make the medicine. This formula is called the Five Phoenix Pill. Take five, seven, or nine pills in the evening in sequence. It is especially effective for treating stomach disorders, parasitic diseases, epidemic pain, throat infections, and abscesses, especially the strange disease of yellow water and scabies." [6] For this purpose, the quantities specified in the "Four Medical Tantras" are four Qian (one Qian equals 3.75 grams) of Terminalia chebula, one Qian of costus root, two-thirds Qian of water calamus, five Fen (one fen equals 0.3 grams) of black monkshood, and one-quarter Qian of musk. The urine of a child is used as a medicinal guide. The efficacy of the medicine varies with the increase in dosage. The dosage of Terminalia chebula and black monkshood is doubled in the Five-Herbs Musk Pill, which is used in the two combinations of medicinal formulas: Geqiong (consisting of Thirteen-Herbs Safflower Pill and Five-Herbs Musk Pill) and Zuoqiong (consisting of Eight-Herbs Main Medicinal Pill and Five-Herbs Musk Pill).

2.1. Clinical Efficacy of The Five-Herbs Musk Pill

In the five medicinal herbs of musk, Terminalia chebula, black monkshood, costus root, and Tibetan calamus, musk primarily has the effects of dispelling heat, reducing inflammation, and killing insects. Similarly, the Tibetan calamus also has the effect of killing insects. Terminalia chebula has the functions of detoxifying and harmonizing other herbs. Costus root and black crow both have the effects of dispelling heat, detoxifying, and relieving pain. When combined, these herbs are applied to treat diseases such as tonsillitis, pharyngitis, influenza, anthrax, neuralgia, stomachache, and toothache. Pharmacodynamic studies have shown that this product possesses anti-inflammatory and analgesic effects. Its impact on the egg white-induced paw edema model in SD rats was investigated by continuously administering Five-Herbs Musk Pill at 20/60/200 mg/kg doses for six days. After the final administration of the drug, fresh egg white was injected into the rat paw 1 hour later to establish an acute inflammation model. The degree of paw edema was measured within 8 hours. The results showed that the paw edema rate of rats could be significantly reduced within 6 hours after inflammation induction ($p < 0.005$). The drug also exhibited positive effects on reducing the capillary permeability in the abdominal cavity of mice and relieving pain induced by formaldehyde, hot plate, and acetic acid injection into the abdominal cavity of mice. [5] According to clinical studies, among 95 cases of chronic pharyngitis, after taking the Five-Herbs Musk Pill, various symptoms showed varying degrees of improvement, achieving a total effective rate of 100%. It also significantly improved the symptoms and signs of chronic hypertrophic pharyngitis. In a clinical study involving 46 cases of chronic pharyngitis treated with the Five-Herbs Musk Pill combined with traditional Chinese medicine, all patients were administered the Five-Herbs Musk Pill while other medications were discontinued. The results showed

that 38 cases (83%) were cured, and 8 cases (17%) improved, with an overall effective rate of 100%. These findings indicate that the Five-Herbs Musk Pill has an excellent anti-inflammatory and analgesic effect on various inflammatory diseases.

It is worth noting that the combined application of Five-Herbs Musk Pill and other traditional Chinese medicines has also shown sound synergistic effects, such as being combined with traditional Chinese medicines such as clearing heat and detoxifying, promoting pharynx and lung moistening, which can further enhance its therapeutic effect and broaden its application scope in clinical treatment. Therefore, as a treasure of Tibetan medicine, Five-Herbs Musk Pills have unique pharmacological effects and broad application prospects, which are worthy of further in-depth research and promotion.

2.2. Preparation of Five-Herbs Musk Pills and Other Drugs

Five-Herbs Musk Pills can be used independently and with other medications. There are many options for combining it with other drugs, covering the treatment of diseases such as gastritis, cholecystitis, hepatitis, nephritis, neurological disorders, pediatric illnesses, gynecological diseases, pneumonia, heart disease, and more. The introduction to the Functions of Commonly Used Tibetan Medicines including the Formulation of Five-Herbs Musk Pill and Other Medications is shown in Figure 1.

Order	Names of compatible medications	Properties	Specially designed to treat specific diseases
1	(Riqiong) Six-Herbs Ridawa Pill + Five-Herbs Musk Pill	Neutral	Gastritis, Stomach ache
2	(Xiqiong) Six-Herbs Nengxiao Pill + Five-Herbs Musk Pill	Hot	Stomach bloating, Enteritis, Intestinal obstruction
3	(Leqiong): Six-Herbs Clove Pill + Five-Herbs Musk Pill	Cold	Laryngitis, Pharyngitis, Tongue root inflammation
4	(Sengqiong): Ten-Herbs Cardamom Pill+ Five-Herbs Musk Pill	Hot	Gastroenteritis, Bladder stones, Nephritis
5	(Sanqiong): Ruyi Zhenbao Pill+ Five-Herbs Musk Pill	Cold	Fever, Arthritis, Neurological Disorders
6	(Jiqiong): Ten-Herbs Frankincense Pill+ Five-Herbs Musk Pill	Hot	Urethritis, Prostate disease
7	(Beiqiong): Shiwei Ruxiang Pill + Five-Herbs Musk Pill	Neutral	Arthritis, Yellow Fluid Imbalance, Paralysis
8	(Zhaqiong): Nine-Herbs Blessing Pill+ Five-Herbs Musk Pill	Cold	Cholecystitis, Gastritis
9	(Geqiong): Thirteen-Herbs Safflower Pill+ Five-Herbs Musk Pill	Cold	Hepatitis, Nephritis, Rhinitis
10	(Geqiong): Nine-Herbs Bezoar Pill+ Five-Herbs Musk Pill	Cold	Hepatitis, Visceral Swelling
11	(Niqiong): Pomegranate Sun Wheel Pill+ Five-Herbs Musk Pill	Hot	Cold-induced pain
12	(Jiaoqiong): Nine-Herbs Jiela Pill + Five-Herbs Musk Pill	Neutral	Anti-inflammatory, Detumescence, Fracture
13	(Daqiong): Daxiang + Five-Herbs Musk Pill	Neutral	Anti-inflammatory, Detumescence, Fracture
14	(Longqiong): Three-Herbs Medical Power+ Five-Herbs Musk Pill	Cold	Pediatric fever, Anti-inflammatory
15	Zuoqiong (Eight-Herbs Zhu Pill + Five-Herbs Musk Pill)	Cold	Inflammatory diseases
16	Yiqiong (Thirteen-Herbs Qinglan Pill + Five-Herbs Musk Pill)	Neutral	Gastric ulcer, Stomach-ache
17	Saqiong (Five-Herbs Saduo Pill + Five-Herbs Musk Pill)	Hot	Cholecystitis, Headache, Enteritis
18	Aqiong (Eight-Herbs Agarwood Pill + Five-Herbs Musk Pill)	Cold	Mastitis, Myocardial infarction, Syncope
19	Aiqiong (Ten-Herbs Chebula Pill+ Five-Herbs Musk Pill)	Neutral	Nephritis, Low back pain

Figure 1: Introduction to the Functions of Commonly Used Tibetan Medicines including the Formulation of Five-Herbs Musk Pill and Other Medications

order	Names of compatible medications	Specially designed to treat specific diseases
1	Five-Herbs Musk Pill + Nutmeg	Treat "Pei Liu" Disease
2	Five-Herbs Musk Pill + Purple Salt	Treat Deficient Stomach Fire
3	Five-Herbs Musk Pill + Charcoal of Shell Teeth	Treat All Types of "Pei Liu" Diseases
4	Five-Herbs Musk Pill + Fragrant Rhododendron	Treat Swelling Caused by Gray Edema
5	Five-Herbs Musk Pill + Charcoal of Deer Antler	Treat Ascites
6	Five-Herbs Musk Pill + Gum Myrrh	Treat Diseases Such as Diphtheria, Anthrax, and Painful Sores
7	Five-Herbs Musk Pill + Asafoetida	Treat All Cold Wind Diseases
8	Five-Herbs Musk Pill + Xin Jian Zi	Mainly Treat Parasitic Diseases

Figure 2: Formulation of Five-Herbs Musk Pill and Other Individual Medications in the Four Medical Tantras

The Five-Herbs Musk Pill is not merely used as a standalone medication or in conjunction with other drugs exclusively. Rather, this formula, when augmented with an additional medicinal component, has been found to be highly effective in treating conditions such as ascites, diphtheria, anthrax, painful sores,

and "Pei Liu" diseases. The pairing and administration of various medications are based on clinical needs and the identification of compatible drug combinations, ensuring the optimal therapeutic outcomes. The formulation of the Five-Herbs Musk Pill and Other Individual Medications in the Four Medical Tantras is shown in Figure 2.

3. Pharmacological Analysis of Five-Herbs Musk Pill Specializing in Parasiticide and Anti-inflammatory Effects

Among the five medicinal ingredients of musk, chebulic myrobalan, black aconite, costus root, and Tibetan calamus, musk has a bitter taste, chebulic myrobalan possesses all six flavors, black aconite is bitter, costus root is both bitter and pungent, and Tibetan calamus is pungent. Among the five ingredients, the bitter taste appears most frequently, occurring three times, accounting for 70% of the total flavors mentioned. The medicinal function of bitter-tasting herbs in the Four Medical Tantras is described as, "Bitter herbs treat stomach stagnation, parasites, thirst, toxicity, leprosy, and dizziness. They also alleviate plague, chiba, stop decay, resolve fat and grease, soothe dry bowels and urine, and improve breast milk production, nipple diseases, and hoarseness." [6] Furthermore, the properties attributed to bitter tastes are as follows: "The natures of salty, sweet, and astringent tastes are successively heavy, while salty, sour, and sweet tastes tend to be oily. The three tastes of astringent, bitter, and sweet are considered cool in nature. The sequence of dullness is astringent, bitter, and sweet. The three sour, pungent, and bitter tastes are light and rough. The combination of sour, pungent, and salty flavors creates hot and sharp medicines. These flavors are not artificially created but inherently possess medicinal properties." [6] In that case, the attributes of bitter taste are successively dull, cool, light, and rough. These attributes target specific ailments, as described in the Four Medical Tantras regarding the efficacy of the Five-Ingredient Musk Pill. The passage states, "This formula is known as the Five-Peng Pill. Take seven, nine, or five pills at dusk, in succession. It effectively treats stomach disorders, parasitic infections, epidemic diseases, throat ailments, carbuncles, and especially the miraculous eradication of yellow water leprosy." [6] It primarily exhibits significant therapeutic effects on parasitic diseases and inflammatory conditions. Upon analysis, the characteristics of inflammatory diseases, such as fever and rapid disease progression, are well-matched by the properties of this medication—dull, cool, light, and rough—which underscores the scientific rationale behind its use.

From this, it can be seen that the significant proportion of bitter drugs in Five-Herbs Musk Pills, with their properties of dullness, coolness, lightness, and coarseness, precisely corresponds to the characteristics of inflammatory diseases such as fever, fast disease course, and the need for rapid intervention. Blunt nature helps to calm the disease, cool nature can clear heat and reduce fire, and light and coarse nature means that the drug has a rapid and extensive effect, which can quickly penetrate the lesion and exert therapeutic effects. The detailed description of the pharmacological effects of bitter medicines in the Four Pharmacopoeia provides theoretical support for the widespread application of Five-Herbs Musk Pills in parasitic and inflammatory diseases. Therefore, as a treasure of Tibetan medicine, the perfect combination of drug composition and pharmacological properties of Five-Herbs Musk Pills reflects the vastness and profoundness of Tibetan medicine pharmacology and provides new ideas and methods for modern medical treatment of inflammatory diseases.

4. Craftsmanship of the Five-Herbs Musk Pill

The production process of the Five-Ingredient Musk Pill is detailed in Chapter 81 of the Four Medical Tantras, under the section titled: In ancient prescriptions, there exists a formula centered on five "roc bird" herbs, each symbolizing the essence of flesh, bone, tendon, blood, and heart. Their precise ratio is one part for four, three parts for three, and two and a half parts, meticulously weighed. Firstly, the chebulic myrobalan and aconite are ground into extremely fine powders in sequence, then mixed with other dried herb powders and stirred thoroughly. Following this, using the urine of a young boy as a catalyst, the mixture is ground with water for three days until it becomes pure and flawless, with a dark and lustrous color. Finally, the mixture is blended with musk to form pills, which possess a clearing and purging medicinal property, suitable for internal consumption. While the medicinal properties of cow bezoar are intense and hot, it can harmonize conditions of both heat and cold. Moreover, the black fragrant medicine is particularly suitable for treating complex illnesses regarded as "demonic illnesses" or "anger-related illnesses." Additionally, perched atop the five-grain jar, the three primary herbs in this formula can all be used for dietary therapy, nourishing both the body and mind [6]. The text provides a detailed account of the dosage, processing, and usage of this medication. We have already covered the

dosage and usage, so now let's focus on the processing method. Primarily, the processing involves drying and grinding chebulic myrobalan and black aconite into powders. Afterward, the powders are mixed with urine from a young boy and stirred evenly throughout the day. When the color turns gray, costus root is added and stirred for a morning. Gradually, as the color deepens to black, Tibetan calamus is incorporated and stirred for another day. Subsequently, musk is added to the mixture, transforming it into a dry powder. To this dry powder, an appropriate amount of alcohol is added and stirred, resulting in a color that is black with a hint of blue. At this point, all processing steps are completed. When used for treating heat-related illnesses, cow bezoar (*Calculus Bovis*) is added, and for cold-related illnesses, long pepper (*Piper longum*) is incorporated. Depending on the specific condition, additional medications may be added as needed.

5. Conclusion

The flexible application of Five-Herbs Musk Pill is also an important manifestation of its clinical value. According to the different properties of the disease, such as heat or cold, the ingredients in the formula can be flexibly adjusted, such as adding bezoar or piper root, to achieve the best therapeutic effect. This personalized treatment concept vividly embodies the principle of "treating according to illness" advocated by Tibetan medicine. While exploring the Tibetan medicine Five-Herbs Musk Pill, we witnessed its unique efficacy and extensive application value, and we deeply recognized the rich treasure contained in the ancient medical system of Tibetan medicine. With the advancement of modern technology, more and more Tibetan medicines are being re-evaluated and discovered, demonstrating enormous potential in treating complex diseases and improving human health. Inheriting and developing Tibetan medicine is not only a respect and protection of traditional wisdom but also a contribution to the cause of human health. We must continue conducting in-depth research on the medicinal ingredients, mechanisms of action, and clinical applications of Tibetan medicine. At the same time, by combining modern technological means, we need to innovate drug research and production processes so that more excellent Tibetan medicines like Five-Herbs Musk Pills can go out of the plateau, go global, and contribute to the health and well-being of all humanity.

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