Analysis on the Advantages and Disadvantages of Common Chinese Medicine External Dosage Forms

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Abstract. Purpose: To explore the characteristics and application of common dosage forms of traditional Chinese medicine. Methods: By summarizing the external dosage form of traditional Chinese medicine and the new dosage form of modern external dosage form and external administration based on this, the advantages and disadvantages of existing common external dosage form in application were analyzed. Results: On the basis of the modern external dosage forms, the traditional external dosage forms have been continuously developed and improved, which is more conducive to the development of the efficacy and the better realization of the purpose of curing diseases. The research on the new external dosage forms will further drive the development of the external dosage forms of traditional Chinese medicine. Conclusion: Clarify the advantages and disadvantages of external preparations and select the appropriate dosage forms according to the symptoms. The future application of new dosage forms in external preparations of traditional Chinese medicine will be the focus of research.

Introduction

From the historical data available for inspection, the earliest dosage form used in traditional Chinese medicine is external dosage form. At first, people used leaves, grass stems and mud ash to coat or bind wounds. Over time, people discovered some external medicines and formed the original coating method. Among the earliest existing medical prescriptions of China, fifty-two disease prescriptions, a total of 300 prescriptions are presented, and now they are sorted into 288, of which more than half are treated by external prescription. The dosage forms that appear include bath agent, fumigant, hot ironing agent, coating agent, etc. The famous medicine family Lishizhen the compendium of Materia Medica already has more than 40 kinds of dosage forms, of which the external dosage form nearly 20 kinds. The 1985 edition of the Chinese Pharmacopoeia contains 29 kinds of external Chinese medicine preparations, the 1990 edition 31 kinds, the 1995 edition 39 kinds, the 2000 edition 43 kinds, the 2005 edition 51 kinds, the 2010 edition 51 kinds and the 2015 edition 70 kinds, showing an increasing trend of external Chinese medicine preparations. The administration theory of external dosage forms of traditional Chinese medicine has been further improved to promote its continuous development.

External Dosage Form of Traditional Chinese Medicine

Traditional external dosage forms of traditional Chinese medicine are various, including decoction, dispersant, Dan ji, hard paste, soft paste, oil agent, liquor agent, spindle agent, nose blowing agent, etc., with different characteristics and different usage conditions.

Decoction

Decoction is a liquid preparation made by decocting or soaking the medicine, removing dregs and taking juice. It is used for bathing, fumigating and gargling for external use and is the earliest and most widely used preparation in China. Adapt to the principle of syndrome differentiation and
treatment in TCM and add and subtract with symptoms [1]. The main advantages of decoction are: (1) to meet the needs of dialectical treatment of traditional Chinese medicine, prescription composition and dosage can be appropriately modified and flexibly selected according to the change of illness; (2) The decoction is generally a compound of several single drugs, which is conducive to giving full play to the pleiotropic and comprehensive effects of the drugs; (3) the decoction is a liquid preparation, which can absorb quickly and exert the drug effect quickly; (4) Water is used as solvent without irritation or side effects. However, the decoction also has some shortcomings: (1) the decoction is large in volume and inconvenient to carry; (2) easy to mildew, fermentation, cannot be stored for a long time; (3) The temperature, water quantity, time and frequency of decoction all have certain requirements and the preparation is tedious; (4) Some active ingredients of traditional Chinese medicine may change in the process of decoction, which may have adverse or beneficial effects on clinical needs.

**Powder**

Powder is a dry powder preparation prepared by crushing and uniformly mixing the medicine with appropriate auxiliary materials for oral administration or external use [2]. As early as the Yellow Emperor's Canon of Internal Medicine, there are records of treating diseases with powder, which is one of the ancient dosage forms. The main advantages of the powder are: (1) the specific surface area is large, easy to disperse, beneficial to cloth absorption and quick to work; (2) the preparation method is simple and convenient, the dosage is easy to control, and the drug quality is relatively stable; (3) suitable for children; (4) transport and carrying is more convenient. But there are also certain disadvantages: (1) the dose is large and easy to absorb moisture and deteriorate; (2) Irritating and corrosive drugs and prescriptions containing more volatile components are generally not suitable for making powder.

**Paste**

In the Qing Dynasty, the "Li Yu Pian Wen" is a representative paste special, the book on the treatment mechanism of cream, preparation technology, application methods and therapeutic experience are discussed in detail, the later generations have a greater impact [3]. External plasters are divided into hard plasters and soft plasters, ointment can make drugs in the local slow absorption and lasting effects, or to protect, smooth skin role. The use of hard paste is simple, easy to carry and store. But curative effect is slow, when viscosity is not appropriate, easy pollution clothing.

**Liquor Agent**

Liquor has been used for thousands of years in China. External medicated wine has wind dehumidification, cold and pain relief rheumatism medicine wine, blood circulation to remove blood stasis, curative injury and broken drop medicine wine, in addition to the treatment of sports system damage of bone-setting water, wan hua oil. The topical medicinal liquor is the commonly used dosage form of the external treatment method of traditional Chinese medicine. It has a high transdermal absorption and can reach the lesion quickly without passing through the metabolism of the digestive system to reduce the burden of liver. However, alcohol is prohibited for patients with hypertension, heart disease, pregnant women, and alcohol allergy, which has certain limitations [4].

**Modern External Dosage Forms of Traditional Chinese Medicine**

With the development of medicine, the curative effect of drugs is becoming more and more important in the treatment of diseases, of which preparation forms play a very important role. With the development of science, technology and productivity, the majority of medical workers are not only studying the traditional old dosage forms and expanding their application scope, but also constantly developing new external dosage forms so that the bioavailability of pharmaceutical preparations is constantly improving.
**Jellies**

The Jellies is usually applied topically to the skin and body cavity (such as nasal cavity, vagina and rectum). In recent years, it has developed rapidly and has been used in dermatology, gynecology and surgery. The traditional Chinese medicine gel is also developing and improving continuously, such as Wang Renyan[5] and so on Zhang’s Paraquat ointment modified gel combined with ultrasonic conductance transmission treatment of knee arthralgia, compared with the traditional black plaster, clinical efficacy significantly, longer duration of efficacy, safety and higher. However, there are also some shortcomings: the preparation contains more water, is easy to corrupt and needs to be added with preservatives. The dissolution property of the drug has certain limitations on the preparation: oil ester soluble drugs are not as suitable as water soluble drugs as jellies.

**Coating Agent and Film Agent**

The traditional Chinese medicine film agent is different from the traditional dosage forms such as traditional plaster, ointment, ointment and dispersant in both preparation and application. The coating agent is suitable for the complex situation of multi-component combination of Chinese herbal medicine and herbal medicine. The coating agent can accommodate both Chinese herbal extracts and extremely fine powder, adapt to the situation of Chinese herbal compound drug use, and the preparation process is simple, which is suitable for the production status of Chinese herbal compound preparation and convenient for promotion and application [6].

Apply to affected area, the thin film is formed after solvent evaporation protect wound surface, at the same time release contained drugs for some skin diseases have good prevention and cure function, avoid the first oral dosing of gastrointestinal tract in effect, reduce drug toxicity, points to certain diseases can give medicine or targeted drug delivery, if produce side effects, easy to remove requests; The efficacy of the diaphragm agent lasts a long time, which is convenient to carry and use. The formation of the membrane reduces the evaporation of water on the skin surface, hydrates the cuticle and increases the skin permeability, thus promoting the drug to be absorbed through the cuticle and better play a therapeutic role.

**Acupoint Sticking**

Based on the theory of meridian of traditional Chinese medicine, it is widely used in dermatology, pediatrics, gynecology and ent department to apply medicine to acupoints and affected areas, and to treat diseases[7-8]. The main advantages are: (1) Through direct stimulation of acupoints by drugs and percutaneous absorption, the local drug concentration is significantly higher than that of other parts and the effect is more direct; (2) Medicine without stomach and intestines, no injury to spleen and stomach; (3) Acupoint application has many simple drug compatibility and preparation, is easy to learn and use, and does not require special medical equipment and instruments. There will also be some adverse reactions in clinical application, and there will be different shades of pigmentation in the local skin for a period of time during the application process [9].

**Transdermal Coating Agent**

Transdermal coating agent, also known as eraser or liniment. It refers to the liquid dosage form containing transdermal absorption promoters in the liquid. It is characterized by uniform distribution of drug characteristics in the matrix in a molecular or submolecular state, rapid and uniform transdermal absorption, and local or systemic therapeutic effect [10]. For example, zhuang lingling[11] used the febrile antipyretic agent zhihuang for the treatment of acute upper respiratory tract infection with remarkable efficacy and safety. Its advantage: (1) The kidney is not absorbed through the gastrointestinal tract, avoiding the liver's first-pass effect and the destruction of the gastrointestinal environment by drugs; (2) The drug can improve the bioavailability of the preparation through the skin, not only can strengthen the local therapeutic effect by combining acupoint pairing, but also can achieve the therapeutic purpose of the whole body through skin absorption. (3) The external administration method is simple and convenient, and the systemic adverse reactions are
relatively small, thus avoiding the bad taste of traditional Chinese medicine and being easy to accept by children.

**Selection of External Dosage Forms of Traditional Chinese Medicine**

Dosage forms are the core of drug treatment, directly related to the ideal function of drugs and the final form of all drugs applied to the body. The selection of suitable dosage forms should not only give full play to the application characteristics of traditional dosage forms, but also develop some safe, efficient, quick-acting and stable dosage forms that can adapt to various drug delivery routes and have high bioavailability.

**Meeting the Needs of Diseases and the Objects of Medication**

Liang dynasty tao hongjing points out: "... Also according to the disease has appropriate to take pills, to loose, to take soup, to take wine, to take paste Fried, also participate in the origin of the disease to consider its system." Disease has delay, the disease has the surface, the person has the old and weak, the body has the strong and weak, dosage form the request is different. Different dosage forms may be adapted to different clinical needs. When choosing drug dosage forms, the pathological and physiological conditions of the applicable population, such as age, gender, weight and compliance, should be considered.

**Depending on the Nature of the Drug**

Four qi and five flavors, meridian tropism is the core of the theory of Chinese medicine properties. Heat drugs are used for cold syndrome, cold drugs are used for heat syndrome, pungent drugs mostly contain volatile oil and other volatile components, bitter drugs mostly contain alkaloids or some saponins, acid enters the liver and salty enters the body. Understanding the four qi and five flavors of Chinese medicine and meridian tropism is necessary for Chinese medicine to make appropriate dosage forms. For example, toxic or irritant drugs should be made into paste pills, wax pills and sustained release tablets.

**Safety of Drugs**

The introduction of the thought of "internal treatment and external treatment" in Huangdi Neijing and the extension of the thought of syndrome differentiation and treatment in "Treatise on Typhoid and Miscellaneous Diseases" in external use of Chinese medicine have promoted the formation of the theory of external use of Chinese medicine [12]. To guide the rational use of traditional Chinese medicine by dialectical thinking provides a theoretical basis for the safe use of traditional Chinese medicine in external treatment. The clinical choice of dosage forms should fully consider the safety of its use.

**Conclusion**

To cure the disease, not only the correct diagnosis, scientific prescription and accurate dosage are required, but also the choice of dosage forms is closely related to the treatment of the disease. When traditional Chinese medicine is used in the clinical prevention and treatment of diseases, it is necessary to make the medicine into various dosage forms and contact or introduce it into the body through different routes of administration so as to promote the absorption of the body and exert its due curative effect [13]. However, many external dosage forms also have certain disadvantages such as toxicity and limitations, which limit their development. In the process of solving these problems, many new dosage forms are constantly emerging.

Modern technology is used to gradually standardize and standardize the traditional dosage forms, clarify the advantages and disadvantages of different dosage forms, select appropriate dosage forms according to clinical symptoms and properties of drugs, conduct in-depth research on the basis of external use of traditional Chinese medicine, and apply new technologies and methods to improve the
content of effective components as much as possible. The development of new dosage forms with significant appropriate therapeutic effects and small toxic and side effects will lead to more and more types and quantities of the external dosage forms of traditional Chinese medicine, and the application prospect of the external preparations of traditional Chinese medicine will be more and more extensive.

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