Analysis of The Rule of Traditional Chinese Medicine for Treating Herpes Zoster

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Abstract. Objective To search the clinical literature of CNKI for the treatment of herpes zoster in Chinese medicine from January 2000 to December 2018, try to summarize the rules of clinical use of herpes zoster, explore potential drug combinations, promote the development of Chinese medicine for herpes zoster, and improve the quality of life of patients. Methods The clinical research literature on Chinese medicine for herpes zoster in CNKI from 2000 to 2018 was included and included in 80 articles.Excel 2013 and IBM SPSS Statistics 23 are used as statistical tools to perform statistical processing and association rule analysis on the selected external components. Results Among the 80 prescriptions, 13 articles were applied to the topical Chinese medicine, involving 9 kinds of traditional Chinese medicines; 67 cases were compound external application, the most used substrate was sesame oil; According to the analysis of the association rules, a total of 5 core drug pairs were obtained. Conclusion Traditional Chinese medicine believes that herpes zoster is often caused by stagnation of the liver. Therefore, more heat-clearing drugs are used in the treatment. At the same time, more choices of bitter and pungent drugs are used to achieve the effect of clearing and diarrhea, heat and divergence. In the external treatment, Borneolum Syntheticum-Indigo Naturalis is a common drug pair, and at the same time compatible with appropriate substrates, to enhance drug permeability, nourish the skin, introduce drugs into the liver, thereby enhancing the efficacy.

1. Preface
Herpes zoster is an acute herpetic skin disease that modern medicine believes is mostly caused by a virus. In Chinese medicine, it is called "wound waist dan", "fire band sore", etc. [1]. Modern clinical treatment is mainly based on traditional Chinese medicine oral administration, external treatment, acupuncture and other methods. Based on external treatment, it has the advantages of direct lesions, precise administration, small side effects and high patient compliance. It is widely used in clinical practice [2]. This article combs the clinical literature on the topical treatment of herpes zoster in traditional Chinese medicine from 2000 to 1818. Potential therapeutic drugs are discovered. External use of traditional Chinese medicine for the treatment of herpes zoster provides ideas, reduces the incidence rate, and improves the quality of life of patients.
2. Materials and Methods
Advanced search in the China Knowledge Network database with the theme of "herpes zoster" and the theme of "topical", or the theme of "herpes zoster" and the theme of "external treatment", the time range from January 2000 to 2018 In December of the year, the literature source was searched for “all journals” and a total of 80 documents were retrieved.

3. Results

3.1. Topical Matrix

3.1.1. Statistical Overview. For the 80 kinds of compound prescriptions involved, 62 articles were prepared by using Chinese medicine fine powder, 16 articles were washed with water decoction and the affected area, and 2 articles were applied to the affected area with single-flavored traditional Chinese medicine. Among the 62 articles in the fine powder, only 3 articles were directly applied to the affected area in the form of traditional Chinese medicine powder, and the remaining 59 documents were applied to certain substrates, the specific results are shown in Table 1.

| Matrix | frequency | percentage | Matrix | frequency | percentage |
|--------|-----------|------------|--------|-----------|------------|
| Sesame oil | 15 | 18.75% | Vinegar | 10 | 12.50% |
| alcohol | 12 | 15.00% | Vaseline | 7 | 8.75% |
| Egg white | 4 | 5.00% | Water | 4 | 27.50% |
| Turpentine | 1 | 1.25% | Ink | 1 | 1.25% |
| Honey | 1 | 1.25% | Iodine | 1 | 1.25% |
| Ginger juice | 1 | 1.25% | |

3.1.2. Analysis of Commonly Used Substrates. The external use of alcohol is first recorded in the Fifty-two Diseases [3]. The Chinese medicine believes that alcohol, sweetness, bitterness, is a hot substance, and it is in the heart, liver, lung and stomach channel. It has sterilization and disinfection. Wet and collaterals, the effect of promoting blood circulation and dispersing blood stasis. The ancients said alcohol is the "longest medicine". Because alcohol is used as a substrate for external use, it can not only promote the dissolution of the active ingredients in the compound, but also increase the permeability of the drug. At the same time, the alcohol is promoted, good at walking, can introduce medicine into the channel, and promote drug efficacy [4].

Sesame oil is recorded according to the Compendium of Materia Medica, and its external use has the effect of "running dryness, detoxification, relieving pain and reducing swelling"[5].External use has the effect of qi and blood, spleen and muscle, blood circulation and phlegm, can lead the drug into the blood from Xuanfu, and can prevent the consumption of its own righteousness, while at the same time exerting the effect of nourishing and moisturizing the skin, promoting wound healing [6-8].

Acetate bitter, slightly warm, with the effect of eliminating phlegm, dilated and detoxification. Traditional Chinese medicine believes that herpes zoster is caused by heat in the liver [9]. Therefore, using vinegar as a matrix for external use can not only alleviate the irritating effect of the drug on the skin, but also can be introduced into the liver channel to enhance the efficacy.

3.2. Single-Flavor Chinese Medicine Application
All the traditional Chinese medicines in the 80 Chinese medicine prescriptions were sorted out. A total of 13 articles were applied externally with a single herb, involving 9 kinds of traditional Chinese medicines, namely Vaccariae Semen, Natrii Sulphas, Portulacae Herba, Scolopendra, Natrii Sulfas, Isatidis Radix, Sedi Herba, None and Indigo Naturalis, among them, Vaccariae Semen and Scolopendra were the most frequently used, both 3 times.
3.3. Analysis of The Application of Traditional Chinese Medicine Compound

3.3.1. Application of Compound Chinese Medicine. The remaining 67 articles were all Chinese herbal compound, and a total of 117 Chinese herbal medicines were used. Among them, there are 17 kinds of drugs with frequency ≥5. For drugs with frequency ≥5, see Table 2 for details.

Table 2. Usage of single Chinese medicine (frequency ≥ 5).

| traditional Chinese medicine          | Frequency | Percentage | traditional Chinese medicine          | Frequency | Percentage |
|--------------------------------------|-----------|------------|--------------------------------------|-----------|------------|
| Borneolum Syntheticum               | 35        | 43.75%     | Rhei Radix Et Rhizoma                | 19        | 23.75%     |
| Phellodendri Chinensis Cortex        | 25        | 31.25%     | Galla Chinensis                    | 10        | 12.50%     |
| Indigo Naturalis                    | 16        | 20.00%     | Scutellariae Radix                  | 10        | 12.50%     |
| Scutellariae Radix                   | 10        | 12.50%     | Alumen                              | 8         | 10.00%     |
| Coptidis Rhizoma                    | 9         | 11.25%     | Scolopendra                        | 8         | 10.00%     |
| Lonicerae Japonicae Flos             | 8         | 10.00%     | Cinnabaris                          | 6         | 7.50%      |
| Angelicae Dahuricae Radix           | 5         | 6.25%      | Gypsum Fibrosum                    | 7         | 08.75%     |
| Forsythiae Fructus                   | 5         | 6.25%      | Gardeniae Fructus                  | 5         | 6.25%      |
| Natrii Sulfas                        | 5         | 6.25%      |                                     |           |            |

3.3.2. Analysis of The Behavior of High Frequency Chinese Medicine. Based on the 2015 edition of the Chinese Pharmacopoeia[13], statistical analysis of the medicinal taste of traditional Chinese medicines with frequency ≥2 was performed. If the traditional Chinese medicine has multiple medicinal tastes and channel, it will be counted. Chinese medicine believes that herpes zoster is mostly caused by stagnation of the liver channel, fire poisoning, herpes is like beading[9], and more cold and warm drugs are used in the treatment to achieve the wind and clearing heat and detoxification, soothing the liver and clearing the dampness and promoting blood circulation. Through the pain relief effect. From the perspective of returning to the channel, it was mainly based on the liver channel. See Figure 1 for details.

Figure 1. Pharmacological taste returning statistics.

3.3.3. Analysis of High Frequency Drug Efficacy. With reference to Chinese pharmacology [14], the efficacy of 41 traditional Chinese medicines with frequency 2 was classified and statistically analyzed. Use frequency is Heat medicine (34.15%), Solution (14.63%), Pinggan Xifeng (12.20%), Attacking insecticide and antipruritic (7.32%), Tonic, Blood stasis, Hemostatic drug, Laxative (4.88%).

3.3.4. Analysis of High Frequency Drug Association Rules. Clementine 12.0 statistical software was used to analyze the association rules, and the association between drugs was displayed by network. The relationship between drugs was further explored by Apriori modeling. A total of 5 core drug pairs
are combined. The lift of all drug combinations was greater than 1, indicating that these drug combinations are statistically significant [10]. The detailed statistical results are shown in Table 3, and the associated “networked display” is shown in Figure 2.

**Table 3.** Analysis of association rules between drugs.

| Drug combination                                      | Support | Confidence | Lifting degree |
|-------------------------------------------------------|---------|------------|----------------|
| Borneolum Syntheticum-Gypsum Fibrosum                | 10.448  | 85.714     | 1.552          |
| Borneolum Syntheticum-Indigo Naturalis-Realgar        | 13.433  | 77.778     | 1.408          |
| Borneolum Syntheticum-Indigo Naturalis                | 23.881  | 75.0       | 1.358          |
| Rhei Radix Et Rhizoma-Galla Chinensis-Phellodendri Chinensis Cortex | 10.448  | 71.429     | 2.519          |
| Phellodendri Chinensis Cortex-Galla Chinensis         | 14.925  | 70.0       | 1.876          |

**Figure 2.** Correlation network display between high frequency drugs (frequency of use ≥ 5).

**Note.** The thickness of the line indicates the strength of the correlation between the two drugs.

4. Discussion
The earliest report on herpes zoster was recorded in the Fifty-two Diseases and Belts in the Warring States Period, and the herpes zoster was contained in the "big belt." Traditional Chinese medicine has a wide variety of methods for treating herpes zoster, and the curative effect has been widely recognized. To modern, traditional Chinese medicine the method of external treatment of herpes zoster has been well inherited and developed, mainly in the form of pastes, ointments, tinctures, lotions. Therefore, this paper aims to sort out the compatibility of modern Chinese medicine for the treatment of herpes zoster and explore its potential the combination of medicine and the law of medication provide ideas for the external treatment of herpes zoster, alleviate the suffering of patients, especially improve the quality of life of patients, and promote the development of traditional Chinese medicine in the treatment of herpes zoster.

According to the analysis results, the traditional use of traditional Chinese medicine for the treatment of herpes zoster, the most frequent use of borneol, borneol for external use with heat and pain, antiseptic muscle. From the point of view of drug efficacy, more clear heat-clearing drugs are used; see from medicinal flavour, use bitter Chinese traditional medicine and pungent Chinese traditional medicine more, are used, and the use of bitter energy, dryness, and firmness can be used to exert diarrhea and heat. The effect of venting gas is reversed, dampness and firmness, and pungent can be dissipated, qi, and blood [11]. From the perspective of medicinal properties, traditional Chinese
medicine for herpes zoster is concentrated in cold. With warm medicine, in line with the treatment of Chinese medicine in the cold, cold medicine can clear heat and purging fire, cooling blood and detoxification, in order to play the role of clearing heat and relieving pain, detoxification treatment of sores; from the perspective of retrogression, topical treatment of herpes zoster Most of the drugs are concentrated in the liver channel. From the perspective of Chinese medicine, herpes zoster is mainly due to the rheumatism and poisonousness in the blood, and the heart and the liver channel feel the wind and poison, so that the poison of the hot and humid winds can accumulate the skin; or the heart is swaying, the three-focus wind Heat burns the liver through the yin, feels the evil of foreign wind and poison; or the temper is damaged, the spleen and lungs are hot and humid, and the liver fires and swells on the muscle surface [12]. Therefore, it is often based on the medicine of the liver channel, and supplemented with drugs such as heart channel, spleen channel and lung channel. At the same time, a certain matrix, such as alcohol, vinegar, sesame oil, etc., can promote the dissolution of the active ingredients in the compound, increase the permeability of the drug to promote the effect of the drug; the sesame oil can play the role of nourishing and moisturizing the skin at the same time as the substrate. To promote wound healing; vinegar can not only ease the stimulating effect of drugs on the skin, but also can be introduced into the liver channel, enhance the efficacy, and use matrix-assisted Chinese medicine to exert its effects. Analysis of association rules found that a total of 5 core drugs were obtained, among which Borneolum Syntheticum-Indigo Naturalis has the highest degree of support, Borneolum Syntheticum-Gypsum Fibrosum has the highest confidence, and Rhei Radix Et Rhizoma-Galla Chinensis-Phellodendri Chinensis Cortex has the highest degree of lift.

In the clinical treatment of herpes zoster, attention should be paid to the use of heat-clearing drugs. When selecting Chinese medicine, we should focus on the bitter, cold and the liver-channel drugs, and should pay attention to the matching of borneol and heat-clearing drugs. Local topical application of traditional Chinese medicine for herpes zoster, direct access to the lesion, precise administration, so that the drug can play a role in clearing the meridians, excreting scorpion venom, accelerating the repair of skin lesions [13], and at the same time matching appropriate matrix to enhance drug permeability, nourish the skin, introduce medicine into the liver channel to enhance the efficacy.

Acknowledgments
This work was financially supported by National base for international cooperation (2016-65), industry-university-research project of henan province (182107000029), special project of standardization of traditional Chinese medicine of state administration of traditional Chinese medicine (2017-149-11).

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