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Article

Analysis of the Medication Patterns of San Yin Si Tian Fang in the "San Yin Ji Yi Zheng Fang Lun" Based on the Ancient and Modern Medical Record Cloud Platform

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Abstract: Objective: To use the ancient and modern medical record cloud platform (V2.3.5) to organize and explore the medication patterns of the "Three Causes, Extremity, and One Disease Syndrome Formula" by Chen Wuxuan, and to summarize its therapeutic ideas. Method: Collect and organize the "San Yin Si Tian Fang" in the "San Yin Ji Yi Zheng Fang Lun", and use the modern medical record cloud platform (V2.3.5) to conduct medication frequency statistical analysis, cluster analysis, and complex network analysis. As a result, a total of 16 Chinese herbal medicines were collected in the "Three Causes, Extreme and One Disease Syndrome Formula", involving 75 traditional Chinese medicines. Statistical analysis showed that roasted licorice was the most commonly used, followed by Pinellia ternata, papaya, ginger, and Poria cocos; Medications mainly include warm drugs, sweet and pungent flavors, as well as drugs that promote lung and spleen meridians. Cluster analysis can divide the above-mentioned traditional Chinese medicine into two groups, with specific grouping as follows. Group 1: ginger, white peony, aconite, papaya, and achyranthes bidentata; Group 2: roasted licorice, poria cocos, dried ginger, pinellia ternata, and green peel. Conclusion: The characteristics of the 16 prescriptions are biased towards Xin Gan Wen, emphasizing the regulation of the spleen and stomach, which may be related to the common use of prescription by doctors in the Song Dynasty and the tendency towards warm and dry medication.

Keywords: Chen Wuxuan; San Yin Si Tian Fang; prescription pattern; ancient and modern medical case cloud platform

I. INTRODUCTION

The Theory of Three Causes and One Disease Syndrome Formula, abbreviated as the Three Causes Formula. The "San Yin Fang" is the earliest comprehensive and specific work on etiology and pathology in traditional Chinese medicine, covering various subjects such as internal medicine, external medicine, gynecology, pediatrics, and five senses. It contains over 1050 prescriptions. [1] However, traditional Chinese medicine is based on natural and life laws to prevent and treat diseases. The changes in the five movements and six qi have led to changes in climate, phenology, and disease symptoms. The five movements and six qi not only have theoretical significance, but also have practical value, and are considered as quick and effective methods for clinical diagnosis. Their theory mainly comes from the seven major theories of qi in the "Su Wen". Chen Wuxuan respected the purpose of the "Yellow Emperor's Internal Classic" and creatively listed 16 qi prescriptions that guide the application of the five movements and six qi based on the five movements and six qi treatment methods. This has important significance for the clinical diagnosis and treatment of external qi diseases and the prevention and treatment of diseases in traditional Chinese medicine [3]. The purpose of this article is to explore the composition and characteristics of the Five Movements and Six Qi Prescriptions in the book, in order to provide new ideas for clinical medication and dialectics.

II. MATERIALS AND METHODS

A. Data source

Select the "Three Causes and One Extreme Disease Syndrome Formula Theory" published by the People's Health Publishing House [4], and organize the prescriptions recorded in the record book.

B. Analysis software

The ancient and modern medical case cloud platform is provided by the Institute of Traditional Chinese Medicine Information of the Chinese Academy of Traditional Chinese Medicine, with the website at www.yiankb.com.

C. Screening criteria

1) *Inclusion criteria*: Formulas come from the theories of the Five Movements and the Six Qi Narration; The formula has a clear name; The drug composition in the formula is complete.

2) *Exclusion criteria*: The prescription is not included in the chapters on the Five Movement Theory and the Six Qi Narrative Theory; Unknown formula; Prescriptions with no or incomplete medication.

D. Data processing

Select the ancient and modern medical case cloud platform (V2.3.5) for the statistical analysis module of traditional Chinese medicine cases, and standardize the names of traditional Chinese medicine according to the "Dictionary of Traditional Chinese Medicine" and "Pharmacopoeia of the People's Republic of China". For example, standardizing "red sandalwood fragrance" as "sandalwood fragrance" and "white Poria cocos" as "Poria cocos".

E. Prescription Entry and Verification

The first step is to implement a single person responsibility system, independently screen and organize prescriptions, sort them out, and input them into the ancient and modern medical record cloud platform; The second part implements a dual person responsibility system, where two people simultaneously review and ensure data accuracy and reliability.

F. Data Statistical Analysis

Analyze standardized data through the "Analysis Pool" module on the WEB side of the Ancient and Modern Medical Record Cloud Platform (V2.3.5), including drug frequency statistics, drug attributes, association analysis, cluster analysis, and complex network analysis.

III. RESULT DESCRIPTION

A. Analysis of medication frequency

The "Three Causes, Extremity, and One Disease Syndrome Formula Theory" includes a total of 16 prescriptions, involving 75 types of drugs, with a frequency of medication reaching 512. There are a total of 8 traditional Chinese medicines with a frequency of medication ≥ 10 times, and the top 5 drugs are roasted licorice, pinellia ternata, papaya, ginger, and poria cocos, as shown in Table 1.

Table 1. Common high-frequency medication (frequency ≥ 10).

Traditional Chinese Medicine	Frequency	Frequency%
roasted licorice	33	68.75
Pinellia ternata	21	43.75
Papaya	15	31.25
Ginger	12	25.00
Poria cocos	12	25.00
aconite	12	25.00
Dried ginger	12	25.00
Ox Knee	12	25.00
Qingpi	9	18.75
Cooked Dihuang	9	18.75

After statistical analysis of the traditional Chinese medicine attributes (four qi, five flavors, and meridian tropism) of the drugs in 16 traditional Chinese medicine prescriptions, it was found that among the 16 prescriptions in Chen Wuxuan's book "Treatise on Prescriptions for Three Causes, Extremity, and One Disease", warm drugs were used the most frequently, reaching 129 times; In terms of sexual taste and meridian tropism, the most frequent use of drugs is in the lung and spleen meridians, with 201 times in the lung meridian and 188 times in the spleen meridian; In terms of the attribution of five flavors, sweet flavored drugs are used the most frequently, with 194 times; In terms of drug efficacy, drugs with spleen and stomach tonifying effects were used the most frequently, at 33 times. The specific efficacy, four qi, five flavors, and meridian distribution statistics are shown in Tables 2–5.

Table 2. Statistical Table of Drug Efficacy Frequency.

Efficiency	Frequency	Frequency%
Nourishing the Spleen and Stomach	33	8.59
Yiqi Revitalization	33	8.59
Strong muscles and bones	24	6.25
Drying dampness and resolving phlegm	22	5.73
Reduce nausea and vomiting	21	5.47
Xiaopi Sanjie	21	5.47
Safe abortion	21	5.47
Ningxin	18	4.69
Jiebiao Sanhan	18	4.69
tonifying liver and kidney	18	4.69

Table 3. Analysis of the Meridian of Medication.

Meridian	Frequency	Frequency%
lung	201	52.34
Spleen	188	48.96
Stomach	155	40.36
Hearts	121	31.51
kidneys	117	30.47
liver	110	28.65
Large intestine	32	8.33
gallbladder	19	4.95
Small intestine	7	1.82
Bladder	6	1.56
Pericardium	3	0.78
triple focus	0	0.00

Table 4. Statistical Table of the Frequency of Five Flavors of Drugs.

Five Flavors	Frequency	Frequency%
Gan	194	50.52%
Xin	134	34.90%
bitter	83	21.61%
Acids	68	17.71%
Light	22	5.73%
astringent	19	4.95%
salty	18	4.69%
slightly bitter	12	3.12%

Table 5. Statistical Table of Drug Four Gas Frequency.

Four Gas	Frequency	Frequency%
temperature	129	33.59%
flat	95	24.74%
Microtherm	54	14.06%
cold	31	8.07%
be of humble origins	19	4.95%
Great fever	13	3.39%
heat	12	3.12%
cool	1	0.26%

B. Drug Association Analysis

Analyze the composition rules of 16 Chinese herbal formulas, and the confidence level represents the probability of the former appearing while the latter appears; Support represents the probability of both occurring simultaneously; The degree of improvement represents the ratio of confidence in the relationship between the two and the probability given by the latter. The higher the ratio, the higher the positive correlation. Set a confidence level of ≥ 0.70 and a support level of ≥ 0.1 to obtain drug association analysis. See Table 6

Table 6. Drug Association Analysis.

Traditional Chinese Medicine	Traditional Chinese Medicine	Support	Confidence level	Improvement degree	Co-occurrence degree
Pinellia ternata	Roasted licorice	0.27	0.71	1.19	10
peony	Roasted licorice	0.22	1.0	1.68	8
Ox knee	Papaya	0.22	1.0	3.7	8
Papaya	Ox knee	0.22	0.8	3.7	8
Qingpi	Pinellia ternata	0.16	1.0	2.64	6
ginger	Roasted licorice	0.16	0.75	1.26	6
Poria cocos	Pinellia ternata	0.16	0.6	1.59	6
Poria cocos	Dried ginger	0.16	0.6	2.78	6
Poria cocos	Roasted licorice	0.16	0.6	1.01	6
Aconite	Papaya	0.16	0.75	2.78	6
Dried ginger	Pinellia ternata	0.16	0.75	1.98	6
Dried ginger	Poria cocos	0.16	0.75	2.78	6
Dried ginger	Roasted licorice	0.16	0.75	1.26	6
Ox knee	Roasted licorice	0.16	0.75	1.26	6

C. Drug Cluster Analysis

Cluster analysis was conducted on high-frequency drugs (ranked in the top 50) using the ancient and modern medical record cloud platform (V2.3.5). The clustering method selected was the Euclidean distance method, and the distance type selected was the longest distance method. The

results are shown in Figure 1. With a distance greater than 4.5 as the boundary, the above-mentioned traditional Chinese medicine can be divided into two groups. The specific grouping situation is as follows. Group 1: ginger, white peony, aconite, papaya, and achyranthes bidentata; Group 2: roasted licorice, poria cocos, dried ginger, pinellia ternata, and green peel.

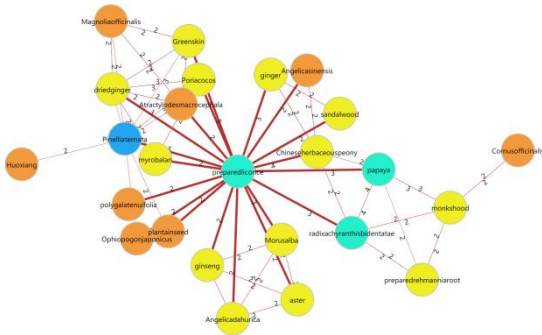


Figure 1. Association Analysis.

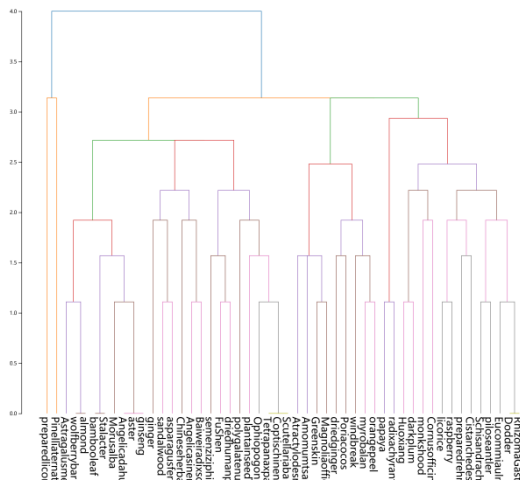


Figure 2. Cluster analysis.

Table 7. Five Transportation Methods.

time	Main gas	prescription	composition
Liuren Year	Suimu too much	Ling Shu Tang	Poria cocos, Magnolia officinalis, Atractylodes macrocephala, green skin, dried ginger, Pinellia ternata, grass fruit, licorice
Sixty five years old	Suihuo too much	Maimendong Soup	Maidong, Baizhi, Pinellia ternata, bamboo leaves, roasted licorice, bell milk, mulberry, white tea, purple garden, ginseng
Liujia Year	Suitu too much	Fu Zi Shan Zhu Yu Tang	Aconite, Cornus, Papaya, Black Plum, Pinellia, Nutmeg, Clove, and Agastache
Liugeng year	Suijin too much	Ox Knee Papaya Soup	Ox knee, papaya, peony, Eucommia ulmoides, wolfberry, yellow pine, dodder, and Gastrodia elata, roasted licorice

Liu Bing Nian	Suishui too much	Chuanlian Fuling Tang	Huanglian, Poria cocos, Maidong, Cheqianzi, Tongcao, Polygala tenuifolia, Pinellia ternata, Scutellaria baicalensis, and roasted licorice
Liuding Year	Suimu is inferior	Cistanche and Ox Knee Soup	Cistanche, Ox Knee, Papaya, Paeonia lactiflora, Rehmannia glutinosa, Angelica sinensis, and Glycyrrhiza uralensis
Liugui Year	Less than the age of fire	Huangqi Fushen Tang	Huangqi Fushen Yuanzhi Ziheche Sour Jujube Kernel
Six self years	The age and soil are inferior to each other	Baizhu Houpu Tang	Atractylodes macrocephala, Magnolia officinalis, Pinellia ternata, Guixin, Huoxiang, Qingpi, Ganjiang, and Gancao
Six B years	Old age is not as good as gold	Ziyuan Soup	Aster, Angelica dahurica, Ginseng, Roasted Licorice, Astragalus membranaceus, Earthbone bark, Almond, Mulberry, White Paper
Liu Xin Nian	Under the age of water	Schisandra chinensis soup	Schisandra chinensis, Aconite, Euphorbia officinalis, Cornus officinalis, Cornus officinalis, and Eucommia ulmoides

IV. DISCUSS

This study conducted frequency statistics on the five elements and six qi formulas in Chen Wuzhi's "Three Causes, One Extreme Disease Syndrome Formula". The top 10 specific drugs were roasted licorice, Pinellia ternata, papaya, ginger, Poria cocos, aconite, dried ginger, Achyranthes bidentata, Qingpi, and cooked Rehmannia glutinosa. The commonly used high-frequency drugs had the effect of tonifying the spleen and stomach, and the meridians were mainly attributed to the lung and spleen meridians. The pathogenesis analysis was often attributed to the "epidemic enters from the mouth and nose", There are many lung symptoms that enter from the mouth and nose in "Treatise on Febrile Diseases" [5], such as "nasal tingling and retching" in Guizhi Tang and "wheezing without sweat" in Mahuang Tang. In addition, it also reflects Chen Wuxuan's academic thought that "stomach is the fundamental part of the human body".

According to the statistics of drug properties, Chen prefers to use warm drugs, followed by mild and mild drugs. Chen is accustomed to using spicy and dry drugs based on differentiation of symptoms and signs. He always maintains a cautious attitude towards prescriptions and never adheres to habits. Shengsanzi "is a famous formula composed of warm and hot drugs used to treat cold and epidemic diseases. The five flavors are the most sweet, followed by the pungent and bitter flavors. The "San Yin Fang" has a saying: "When it comes to treating and transforming, people should also respond to it... Those who become ill with the deficiency and excess of their organs are called Qi of the time." Its medicinal taste is often taken from the pungent sweetness to "turn pungent sweetness into yang", and sweet flavored medicines are used to supplement and harmonize various medicines. Bitter can dry, diarrhea can be strong, and the astringent, spicy, and warm flavors can be restrained to make up for the deficiency. It has the beauty of complementing each other. He drew on clinical experience and added drugs to the original formula, We have created the "Nourishing Stomach Soup" that "warms the stomach and reduces phlegm, and eats healthy qi". An important factor is the geographical environment. Wenzhou is located near the mountains and the sea, and is humid all year round. Dampness is particularly common, so it is not afraid of dryness and is suitable for the application of calming stomach powder, regulating qi powder, and nourishing stomach soup, which are also consistent with its concept of "adapting to local conditions" [10].

According to the ranking of confidence, it was found that the most common ingredients were roasted licorice combined with Pinellia ternata and peony, and Achyranthes bidentata combined with papaya. Roasted licorice, Pinellia ternata regulate qi and stomach, Achyranthes bidentata and papaya dry dampness and phlegm, and also supplement deficiency. After clustering analysis of traditional Chinese medicine, it can be concluded that the first group is ginger, white peony, aconite, papaya, and achyranthes bidentata, while the second group is roasted licorice, poria cocos, dried ginger,

pinellia ternata, and green peel. The first group is the Wen Yang Jian Pi Li Shui group, the Jian Pi Li Shui group, which covers the spleen and likes dryness and dampness, and spleen deficiency is prone to dampness. Therefore, Jian Pi Li Shi is a commonly used treatment for spleen deficiency. The second group is the Jian Pi and Wei group, which covers the spleen and promotes clear qi, and the stomach qi is reduced to flat. If the spleen and stomach are not in harmony, it is easy to generate turbid qi. Therefore, Jian Pi and Wei are the methods for consolidating and protecting the body's positive qi.

These 16 prescriptions are collectively referred to as the San Yin Si Tian Fang, which are representatives of traditional Chinese medicine's luck prescriptions. [11] Each of the 10 "Five Yun Prescriptions" is based on its age and luck, and is blended with the five flavors. The prescription is regular, the concept is exquisite, the formula is simple and the medicine is regular, and the duration is average. (See Table 9) There are also 6 "Six Qi Seasons for the Diagnosis and Treatment of Civil Diseases", designed for the annual changes in the Qi (Sui Qi) of the Si Tian, namely: Chenxu Year Jingshun Tang, Maoyou Year Shenping Tang, Yinshen Year Shengming Tang, Ugwei Year Beihua Tang, Ziwu Year Zhengyang Tang, and Sihai Year Fuhe Tang. Each prescription has its own additions and deletions. The 16 prescriptions are characterized by a preference for Xin Gan Wen and a focus on regulating the spleen and stomach, which may be related to the common use of mature prescriptions by doctors in the Song Dynasty to treat diseases, with a preference for warming and dryness [12]. The Qing Dynasty physician Miao Wen [13] compiled and annotated these 16 prescriptions into the "San Yin Si Tian Fang" for publication, and Wang Xugao [14] compiled the "Qi Zheng Zhi Ge Jue" based on the 16 prescriptions, all of which reflect the ancient physicians' emphasis on the San Yin Si Tian Fang. Nowadays, many doctors have begun to pay attention to the clinical value of the five movements and six qi, and have applied them to clinical practice. Gu Zhishan [15] flexibly applied the three factor method and achieved satisfactory results. However, it should also be noted that these formulas generally tend to be spicy, sweet, and warm in terms of medication. Therefore, in specific clinical practice, treatment should be based on differentiation of symptoms and signs, and adherence to ancient formulas should be avoided without being flexible.

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