

# An Analysis on the Drug Using Rules of Radix Paeoniae Alba in Fuqingzhu Medicine for Women

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**Abstract:** Objective: Systematizing the internal consumption prescriptions containing radix paeoniae alba in Fuqingzhu Medicine for Women - Women's Volume, exploring the rules of Fu Qingzhu's use of radix paeoniae alba and her academic thoughts. Methodology: Fuqingzhu Medicine for Women, published by China Medical Science Press in January 2019, was used as a search source for extracting and organizing the prescriptions that met the inclusion criteria, establishing a database, and analyzing the frequency, preparation method and dose of the medicines and prescriptions. Meanwhile, the association rules of high-frequency drugs were analyzed separately with the help of SPSS modeler software. Results: In the end, 33 prescriptions were included, and it was found that radix angelicae sinensis, atractylodes macrocephala and prepared rehmannia root were more frequently paired with radix paeoniae alba. The association rules showed that five core drug groups were obtained, namely radix paeoniae alba-radix angelicae sinensis, radix paeoniae alba-atractylodes macrocephala, radix paeoniae alba-prepared rehmannia root, radix paeoniae alba-ginseng, radix paeoniae alba-glycyrrhiza glabra, etc. The drug combinations were mainly blood and Qi tonics. For the preparation of radix paeoniae alba, stir-frying with wine is the main technique; the average dosage of radix paeoniae alba is 8.21 qian (equivalent to 30.63 g nowadays), and the large dosage of radix paeoniae alba is mainly used to treat various gynecological diseases caused by liver stagnation and its failure to store blood. Conclusion: For the treatment of gynecological diseases, Fu Qingzhu used radix paeoniae alba mostly, which is a pure and mild medicine (without any harsh product). This medication will regulate the liver and spleen thus adjusting the Qi and blood for the harmonization of the conception and governor vessels, fully reflecting the academic thought that "the liver is the precondition for women" and "the spleen is the source of qi and blood".

**Keywords:** Fuqingzhu Medicine for Women, Radix Paeoniae, Compatibility rule, Clinical application

## 1. Introduction

Fu Qingzhu (1607-1684) was a famous medical scientist in the late Ming and early Qing dynasties. He is the author of "Fu Qing's Main Female Section", "Fu Qing Main Female Section" and other works, among which "Fu Qing Main and Female Section" is the most famous. [1] "Fu Qing's Master and Female Family" reflects Fu's good use of Tibetan elephant theory and five elements theory to analyze the physiological characteristics of women and the pathological characteristics of gynecological diseases. The diagnosis is mostly determined in the liver, spleen, and kidney, and Fu's analysis of the cause is more contrary to the opinion of ordinary people, and the common question sentences in the article are given, and then a detailed explanation is given. The treatment is mainly to strengthen the spleen and stomach and regulate qi and blood. The discussion in the whole book is concise and simple, the theory and law are rigorous, and most of the prescriptions are concise and effective.

White peony was first published in the Shennong Materia Medica, called peony. Bitter, sour, slightly cold return to the liver and spleen meridians, the effect is to nourish blood and regulate menstruation, reduce yin and stop sweating, soften liver and relieve pain, and calm liver yang [2]; Widely used in gynecological diseases. Among the 80 first parties contained in the "Fu Qing Main Female Science and Women's Science Volume", white peony appeared in 33 first parties, accounting for 41.25%, which shows the application of white peony in the treatment of female diseases. Browsing the whole book, Fu's dosage is rigorous when using white peony, the prescription medicine is few and refined, in terms of pathogenesis, he attaches importance to the liver, spleen and kidneys, and uses the principle of five elements to clarify the etiology and pathogenesis, which is highly respected by obstetricians and gynecologists. This article makes a superficial analysis of the law of Fu's application

of white peony and its modern pharmacological research and application, in order to provide certain reference significance for clinical application.

## 2. Materials and methods

Data source "Fu Qingzhu Female Section · Female Section Volume"

Inclusion Criteria The prescriptions mentioned in "Fu Qingzhu Nvke·Nvke Volume" consist of prescriptions containing white peony root.

The names and classifications of data processing drugs refer to the 2020 edition of "Pharmacopoeia of the People's Republic of China"<sup>[3]</sup>, the "Thirteenth Five-Year Plan" textbook for higher education in the national Chinese medicine industry, and the fourth edition of "Chinese Medicine in the New Century" published by China Traditional Chinese Medicine Press. Pharmacy" to standardize<sup>[4]</sup>. Standardize the names of traditional Chinese medicines that appear in the prescription, such as "black mustard ear" as "Nepeta charcoal", "Shudi" as "Shudihuang", "Shengdi" as "Shengdihuang", "Shenggu meat" It is unified as "dogwood", "Panpi" is unified as "Mae saffron", "Gu Zhi" is unified as "Psoraleae" and so on.

Statistical methods Excel 2019 and Spss Modeler were used for statistical processing.

## 3. Results and Analysis

### 3.1. Processing method of white peony root

Among the 33 recipes containing white peony root, 27 of them were fried with white peony root wine, accounting for 81.82%, as shown in Table 1. Stir-frying with wine can ease its coldness and sourness, and enhance the tonic effect. It is good at reconciling the urgency and urgency, and is mostly used for many pains in the middle and lower focus. "Materia Medica Yanyi Supplement" states that "Peony purifies the spleen fire, and its nature is sour and cold. It must be fried with wine in winter months. When abdominal pain is mostly caused by blood coagulation, it must be fried with wine."<sup>[5]</sup>

Table 1: The processing method of white peony.

Processing method	Frequency	Frequency (%)
Stir-fried wine	27	81.82
Stir-fried with vinegar	3	9.09
Wine wash	2	6.06
Raw	1	3.03

### 3.2. Dosage of white peony application

In the 33 prescriptions containing *Paeonia lactiflora*, the average dosage of *Paeonia lactiflora* is 8.21 yuan, which is equivalent to the current 30.63g, which is relatively large. In summary, the prescriptions in the book with a dosage of one or two of white peony root are all based on white peony root as the king drug. 1 ratio is compatible. Li Yuming<sup>[6]</sup> analyzed the "dose-efficacy relationship" of a single herb of *Paeonia lactiflora*, and found that when the dosage of *Paeonia lactiflora* was 31.3g, it exerted the power of nourishing the liver and nourishing blood. See Table 2.

Table 2: *Paeonia lactiflora* dosage statistics.

Dose	Frequency	Frequency (%)
Five Coins	15	45.45
Three Coins	9	27.27
One or two	6	18.18
Two money	2	6.06
One pound	1	3.03

### 3.3. Use of single flavor Chinese medicine

Among the 33 important prescriptions included, there are 69 traditional Chinese medicines with a frequency of 285 times. There were 12 high-frequency drugs (frequency  $\geq 7$  times), with a cumulative

frequency of 151 times, accounting for 53.0% of the total frequency. 7.4%) and Shudi (17 times, 6.0%). See Table 3.

Table 3: Use of single traditional Chinese medicine (frequency  $\geq 7$ ) (times)

Drug	Frequency	Frequency (%)
Angelica	26	9.2%
Atractylodes	21	7.4%
Rehmannia	17	6.0%
Ginseng	14	4.9%
Licorice	14	4.9%
Bupleurum	11	3.9%
Poria	11	3.9%
Moutan Bark	9	3.2%
Yam	8	2.8%
Black Mustard	7	2.5%
Ophiopogon japonicus	7	2.5%
Dogwood	7	2.5%

### 3.4. Analysis of high-frequency drug association rules

Spss Modeler statistical software was used to analyze the association rules of drugs, Apriori was used to explore the compatibility relationship between different Chinese medicines, and its support degree was set to 10%, its confidence was 80%, the maximum number of antecedents was 1, and the potential drug combinations were excavated under conditions such as  $\geq$  improvement, and the improvement degree of all drug combinations was  $>1$ , indicating that the difference was statistically significant. The statistical results of the core drug combination are shown in Table 4. White peony and angelica have the highest support.

Table 4: Analysis of association rules between drugs.

Continuing Item	Anterior Item	Support Percentage (%)	Confidence Percentage (%)	Gain
White peony	angelica	72.727	95.833	0.988
White peony	White art	63.636	95.238	0.982
White peony	Cooked rehmannia	51.515	94.118	0.971
White peony	licorice	45.455	93.333	0.963
White peony	ginseng	42.424	100	1.031
White peony	tuckahoe	33.333	100	1.031
White peony	bupleurum	33.333	90.909	0.938
White peony	Peony peel	27.273	100	1.031
White peony	yam	24.242	100	1.031
White peony	dogwood	21.212	100	1.031
White peony	Wattle charcoal	21.212	100	1.031
White peony	Mai Dong	21.212	85.714	0.884
White peony	Chuanxiong	18.182	100	1.031
White peony	Tangerine peel	18.182	100	1.031
White peony	Rehmannia	15.152	100	1.031
White peony	Incense attached	12.121	100	1.031
White peony	gardenia	12.121	100	1.031

## 4. Discussion

### 4.1. Frequency analysis of drug compatibility

The results of frequency analysis showed that Angelica, Ginseng, Atractylodes, Shudi, Ginseng, Atractylodes, and Licorice were most frequently used in the included prescriptions. Angelica and Shudi were blood-tonifying drugs, while ginseng, Atractylodes, Licorice, and Chinese yam were Qi-tonifying

drugs. White peony attaches great importance to nourishing qi and blood.

The compatibility of Baishao with Angelica and Rehmannia glutinosa is the main component of Siwu Decoction, the foundation of gynecological nourishing and nourishing blood. Blood and blood are used to regulate menstruation. Yang Chun used Siwu Decoction to treat 40 patients with primary dysmenorrhea, and the total effective rate was 90.0% increased, the apoptosis of liver cells decreased, effectively relieved the lower abdominal pain in patients with primary dysmenorrhea, and improved menstrual color and quality<sup>[7-8]</sup>.

White peony root is compatible with ginseng, Atractylodes, and licorice. Ginseng, Atractylodes, and licorice are the main components of Sijunzi Decoction. Zhang Lu's "Zhang's Medical Tongue" in the Qing Dynasty said: "Qi has spirit but no form, and it is easy to fill it when replenishing it; blood has form but no spirit, and nourishing is difficult to take effect quickly. It is also the principle. Therefore, tonifying qi does not supplement blood, so that qi is full and full, and blood is also full." <sup>[9]</sup> Blood deficiency should be supplemented by blood, if blood deficiency is caused by spleen deficiency, it should supplement gas at the same time, or actually supplement it. Qi is the main, and the blood is supplemented, which reflects the spirit of seeking the root of the disease. If the blood is deficient due to a large amount of blood loss, it is advisable to replenish the qi and absorb the blood. In Fu's Buqi Zhuluo Decoction for the treatment of fetal leakage, ginseng is the monarch medicine to invigorate the vitality, invigorate the spleen and regulate the middle; white peony root nourishes the blood and nourishes the yin, and together with other medicines, it nourishes the qi and absorbs the blood, and has the effect of nourishing the blood and relieving the miscarriage.

#### **4.2. Analysis of Association Rules**

The results of the association rule show that when the support degree is 50%, white peony-angelica, white peony-baishu, and white peony-ripe rehmannia have higher confidence. Angelica is warm and moist, long at tonifying blood, for blood qi medicine, longer than moving and activating blood, angelica and white peony medicine is quite valued by generations of doctors, Mr. Ding Ganren <sup>[10]</sup> is good at regulating qi and blood in the treatment of menstrual diseases, using white peony, angelica, red dates to nourish blood, using ejiao beads, raw charcoal, fried jingle mustard to stop bleeding, and green orange leaves, green peel, orange network, and moon flowers are commonly used for qi management. According to scholars' surveys, when the confidence level of angelica and white peony in the association law of the two flavor drugs commonly used in menstrual diseases in "Gynecology Caizhen" is 100%, the support degree reaches 66% <sup>[11]</sup>, which shows that the statistical results obtained by data analysis and the theory of the millennium inheritance of Chinese medicine can be mutually corroborated; Baishu is sweet and warm to replenish weakness, strengthen the spleen and invigorate qi. Zhang Miao <sup>[12]</sup> et al. found in the analysis of the "Baishu-Bai Peony" drug pair in the Chinese prescription database that the prescription containing Baishu-Bai Peony medicine pair accounted for 581 gynecological diseases, and Fu's combination with Baishu and White Peony mainly treated various gynecological diseases caused by liver and spleen discord, such as Fu's creation with soup, which was supplemented in the dispersion, and disappeared on the rise, slightly soothing the liver product, so that the wind and wood were not blocked in the ground, then the spleen and soil rose, the moisture disappeared, and the vaginal discharge was absent; Cooked rehmannia and white peony are both still medicines. Cooked yellow taste sweet and moisturizing, into the liver and kidney is good at nourishing yin blood, two drugs combined, liver and kidney supplement, nourishing water Hanmu, in the prescription of white peony, white peony, cooked and used more for the treatment of diseases caused by liver and kidney deficiency. For example, Fu's treatment of thinness and infertility with the cultivation of essence and jade soup, in which the reuse of cooked rehmannia to nourish kidney water, combined with white peony to replenish blood and regulate the liver, together to nourish the kidney and nourish the blood, to tonify the work of Chongren. Modern scholars in the study of gynecological reproductive diseases ancient recipes, so as to study the theoretical relationship of kidney main reproduction, learned that in the frequency statistics table of the 2-flavor drug group of reproductive formulas, the cooked rehmannia-white peony combination ranked 24th (100th in total), and the drug association chart also showed that the drugs with more links were angelica, cooked rehmannia, baishu, white peony, etc. <sup>[13]</sup>. Analysis of the efficacy of such drugs shows that nourishing the essence and blood gas of the kidney, liver and spleen can promote the normal physiological function of the reproductive system.

### 4.3. Analysis of Fu Qingzhu's application of *Paeonia lactiflora* to treat diseases

#### 4.3.1. Menstrual disease treatment

There are a total of 12 prescriptions for menstrual diseases using white peony root. For menstrual diseases, Fu Shi believes that "menstrual water flows out of the kidneys", so tonifying the kidneys is the first method. However, it is well known that women are born with the liver. Menstrual disorder. Therefore, for menstrual disease, the liver and kidney should be in harmony. Fu Shan re-uses *Paeonia lactiflora*, which softens the liver and nourishes blood, in regulating menstruation. By softening the liver and nourishing the liver, the liver will be nourished and nourished, the liver qi will relax itself, and the liver qi will relax, and the kidney qi will relax. , then menstrual disease can be resolved, such as Qingjing San and Liangdi Tang in the early stage of menstrual water, Dingjing Tang without regular menstrual water successively, and Tiaogan Decoction for postmenstrual pain in the lower abdomen. Modern pharmacological studies have shown that peony glycosides reduce hepatocyte damage and enhance the uptake of bile salts in the blood by hepatocytes through antioxidant, and have certain choleric and anti-yellowing and hepatoprotective enzyme-lowering effects<sup>[14]</sup> Professor Mi Liehan<sup>[15]</sup> clinical diagnosis and treatment of liver and wood not sparse, uneasy mind, menstrual disease, the use of white peony and Bupleurum as the main core drug pair for menstrual regulation, intended to harmonize qi and blood, soothe the liver and invigorate the spleen, Peace of mind.

#### 4.3.2. Treatment of pregnancy diseases

There are 6 prescriptions for pregnancy diseases using white peony root, Fu Shi believes, "Women are pregnant, because the kidney qi is prosperous. Once the kidney is fertilized and become pregnant, the kidney water will give birth to the fetus, and it will not have time to moisten the five internal organs, and the liver is the kidney. The son, the mother's qi is relieved by the daily eclipse, and without the nourishment of body fluid for one day, the liver qi will be forced and the liver blood will be consumed." Therefore, the role of white peony in the treatment of pregnancy diseases is mainly its function of nourishing liver blood. It is reflected in the Shungan Yiqi Decoction for the evil of pregnancy, the Jieyu Decoction for the pain of the pregnant child, and the Qi Xiehuo Decoction for the abortion due to excessive anger in pregnancy. Professor Wang Lina<sup>[16]</sup> used the self-made Angong Baotai recipe to treat fetal leakage, in which Baishao was used to nourish blood and nourish the liver, and relieve pain. Modern pharmacological studies have shown that *Paeonia lactiflora paeoniae* extract can effectively inhibit uterine contractions in rats, and at the same time can regulate uterine vasomotor function and increase uterine blood supply<sup>[17]</sup>.

#### 4.3.3. Treatment of leukorrhea

There are 3 prescriptions for leukorrhea, and it is well known that leukorrhea is closely related to the spleen. The "Golden Chamber Synopsis" says: "If you treat someone who is not ill, you will see the disease of the liver, know that the liver transmits the spleen, and strengthen the spleen first, ... ..." <sup>[18]</sup>, Fu Shi cleverly used this method in the treatment of leukorrhea, using white peony to soften the liver and calm the liver, so that the liver body can be nourished, the liver qi is adjusted, and the wood does not restrain the soil, the spleen transport and transformation function is normal, dampness Evil will be removed and brought to an end. Wandai soup under leukorrhea, Modified Xiaoyaosan under green belt, Qinggan Zhilin soup under red belt, etc. Professor Chu Jijun<sup>[19]</sup> believed that the direct factors leading to leukorrhea were dysfunction of the spleen, kidney and liver, and Wandai decoction was used to treat leukorrhea (bacterial vaginitis), and the patient recovered after taking the medicine for more than a month. Wang Xiaoyan<sup>[20]</sup> proved through experiments that *Paeonia lactiflora* has a good effect on inhibiting inflammatory edema and exudation, and concluded that *Paeonia lactiflora* has a good anti-inflammatory effect.

## 5. Conclusions

After a comprehensive reading of Fuqingzhu Medicine for Women - Women's Volume, it can be found that Fu Shan used *radix paeoniae alba* to treat liver stagnation, liver and kidney insufficiency, blood syndrome of Qi and blood deficiency, infertility, pain and etc.; *radix paeoniae alba* is often used in combination with blood tonics such as *radix angelicae sinensis* and prepared *rehmannia* root, with Qi tonics such as *atractylodes macrocephala*, ginseng and licorice, with heat-clearing herbs such as peony bark and gardenia, so as to nourish and soften the liver, nourish blood and replenish blood. When using *radix paeoniae alba* in treating menstrual diseases, Fu attached importance to the fluidity and surplus & deficit of Qi and blood of liver and kidney; in treating pregnancy diseases, Fu attached importance to

the supply of Qi and blood and kidney fluid; in treating the disease of hypochondrium, Fu attached importance to the harmonization of liver and spleen. Summarizing the rules of Fu Shan's use of radix paeoniae alba is of great importance, both in terms of the in-depth understanding of the medicinal properties of radix paeoniae alba and the clinical application of the medicine combinations.

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