

## Review Article

### Review of the article: “Data Mining Analysis of Professor Qiu Changlin’s Chinese Medicinal Therapy for Parkinson’s Disease”

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#### Abstract

**Objective:** This paper aims at exploring ideas on the syndrome differentiation and formula administration of PD and making fundamental works for finding the exact mechanisms of anti-PD decoctions.

**Methods:** The CNKI, Pub Med, and Wan fang databases was searched with the key words of “traditional Chinese Medicine”, “data mining”, etc.,

**Results:** The article named “Data Mining Analysis of Professor Qiu Changlin’s Chinese Medicinal Therapy for Parkinson’s Disease” was chosen to be the main research subject.

**Conclusion:** Although there’re several inadequacies existing in the article, we appreciate the article as a step forward towards the goal of unified standardized syndrome differentiation and clarified mechanisms in CM treatment of PD.

**Keywords:** Data mining; PD; Review; Traditional Chinese Medicine (TCM) Neurology

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#### Introduction

The neurological disease has become one of the leading causes of disabilities, meanwhile the prevalence of Parkinson’s Disease (PD) increases rapidly due to upsurging global geriatric population. As a matter of fact, more than 6 million individuals worldwide have PD [1]. PD is characterized by the presence of intracytoplasmic conditions from the depletion of pigmented DA-containing neurons in the region known as the substantia nigra pars compacta and protein aggregates called Lewy bodies (LBs). In the symptomatic terms, PD patients are relentlessly suffered from both the motor signs (bradykinesia, rigidity, rest tremor and postural instability) and the non-motor signs (olfactory loss, sleep dysfunction, autonomic dysfunction, psychiatric disturbances, cognitive impairment, etc.) [2].

Nevertheless, for PD patients, the current therapies offer symptomatic relief only, namely the therapies are unable to resist nor reverse the relentlessly progressive and significantly debilitating condition of PD [3]. In internal medicine treatments, pharmacologic treatments for PD are typically dopamine based, while the nonpharmacologic approaches comprise exercises and speech therapies, etc. In surgery department, treatments such as deep brain stimulations (DBS), pallidotomy and sub-thalamotomy are utilized for PD patients with medication resist tremor. The surgery treatments have been proved to be able to lessen motor symptoms but with high incidence of side effects, such as reduction in verbal fluency, etc. [4].

Chinese Medicine (CM) treatments have been proved by various clinical practices to be able to alleviate the side effects of modern medicine and retard the progression of neurodegeneration [5]. However, the syndrome differentiations of PD, which is categorized into tremor syndrome in CM theories, haven’t been unified. While, the exact mechanisms of the anti-PD decoctions remain unknown [6].

Therefore, in order to explore ideas on the syndrome differentiations of PD and make fundamental works finding the exact mechanisms of the anti-PD decoctions, we chose the latest article—“Data Mining Analysis of Professor Qiu Changlin’s Chinese Medicinal Therapy for Parkinson’s Disease”(The article) as the research subject, which was published in 2023 [7]. The article aims at concluding the core prescription and clarifying the syndrome differentiation of tremor syndrome of Professor. Qiu by collecting and analyzing his decoctions for PD patients in five years. On the basis of results of data mining, the article presents the core prescription comprises Tian Ma, Gou Ten Yin and Zuo Gui Wan with several Chinese Medicinals (CMs) added or deleted. It’s known from the article that Prof. Qiu argues the most basic pathological mechanisms of tremor syndrome are “liver wind internal movements” and “the malnourishment of tendons and meridians”. Generally speaking, although there is inadequacy in the article, we appreciate the article as a step forward to achieve the ultimate goal of unified standardized syndrome differentiation and clarified mechanisms in CM treatment of PD.

#### Summary of the Article

To start with, the article conducted the process of data cleanse and normalization. Prof. Qiu’s prescription for tremor syndrome in five years (January 2018 - May 2022), which had been proved to be effective on the basis of clinical inspections in subsequent visits, were

collected and inputted into database. In accordance with the inclusion and exclusion criteria, unqualified prescriptions had been eliminated from the database. 1162 effective prescription qualified for further investigations were filtrated. Then the article carried out the data normalization process, namely the names, four qi, five flavors and meridian entries of the CMs appearing in 1162 prescriptions were normalized according to Pharmacopoeia of the People's Republic of China [8], Materia Chinensis [9] and the Chinese Materia Medica [10] (Figure 1).

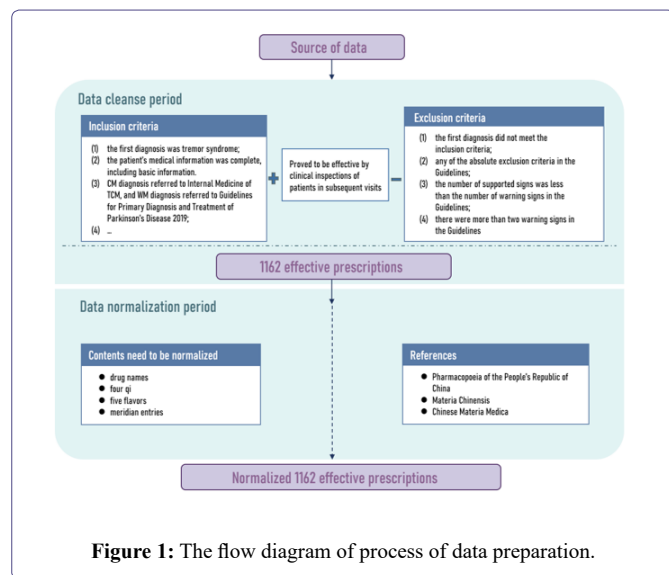


Figure 1: The flow diagram of process of data preparation.

In the next step, the article conducted total frequency analysis, classified frequency analysis (of four qi, five flavors, meridian entries) and cluster analysis by utilizing Microsoft Excel 2019 and SPSS Modeler 22.0. The results of these analysis are demonstrated in figure 2.

Analysis	Results
Frequency analysis of four qi	Warm37.95%, Cold25.14%, Normal24.63%, Cool9.34%, Hot2.93%
Frequency analysis of five flavors	Sweetness47.67%, Bitterness20.18%, Pungency15.85%, Saltiness12.13%, Sourness2.23%, Astringency1.93%
Frequency analysis of meridian entries	Liver26.13%, Kidney17.40%, Heart16.48%, Spleen9.57%, Lung9.00%, Stomach8.23%, Gallbladder7.01%...
Systematic cluster analysis	Tian Ma, Gou Ten, Mu gua, Niu Xi, Shu di huang, Zheng Yu rou, Cu Gui Jia, Shen Jincao, Fu Bai Shao and Chao Jiang Can

Figure 2: The results of data-mining analysis.

When it came to the conclusion, the article concluded that Prof. Qiu believes the tremor syndrome mainly belongs to the liver and kidney system, while its pathological factors are bond with wind. From the results of frequency analysis and systematic cluster analysis, the article believed that the efficacies of these anti-PD CMs are mainly "nourishing yin to calm wind" and "relaxing tendons to activate collaterals". The article argued that the most basic pathological mechanisms of tremor syndrome are "liver wind internal movement" and "malnourishment of tendons and meridians".

## Critique

The article "Data Mining Analysis of Professor Qiu Changlin's Chinese Medicinal Therapy for Parkinson's Disease" assembled and analyzed Prof. Qiu's prescription for PD patients in five years. The results of data mining of the article did propose new ideas on syndrome differentiation and formula administration of tremor syndrome, which can be appreciated as a step forward towards the ultimate goal of forming unified syndrome differentiation of tremor syndrome and finding out the exact anti-PD mechanisms. Nevertheless, there are several inadequacies of the article that could be modified into better condition.

### Lack of separated analysis of different disease patterns of the tremor syndrome

The essence and advantage of CM therapy is to prescribe decoctions according to the specific disease pattern of each patient. The article didn't conduct classified analysis of different disease patterns of the tremor syndrome, which to some extent miss the opportunity of demonstrating the salient advantage of CM treatment.

### The meaning behind the drug association rule analysis haven't been explained thoroughly

The paper mentioned that in 17 CMs with highest frequency, the correlations between Jiang Hou po and Fu Chao Zhi Shi, Shan Zhuyu and Gui Ban, Shu Di Huang and Pao Fu Pian are tighter than the others. In the discussion part, the article didn't present detailed explanations on this phenomenon. In our opinion, these inadequacy in discussion part should be modified.

### Medical statistical methods have space for improvement

Recently, data mining techniques combined traditional Chinese Medicine researches are in full blast. Common data mining techniques include Hybrid optimization feature selection, Regression analysis, Bayesian analysis, cluster analysis, latent structure model, associated rule, topic model, decision tree, free-scale network, etc., [11]. Each data mining technique has its own advantages and disadvantages. The article mainly utilized frequency analysis, systematic cluster analysis and drug association rule analysis. For further investigations, with various kinds of analysis methods utilized, the article could gain deeper insights into the logic and relations behind the decoctions.

## Conclusion

By reviewing the article: Data Mining Analysis of Professor Qiu Changlin's Chinese Medicinal Therapy for Parkinson's Disease, we received different ideas on the theory of syndrome differentiation and formula administration of PD. Meanwhile, since there are deficiencies in the analysis methods perspective and discussion perspective, we can pay attention to these points when we conduct our research in the same field in the future. In general, we appreciate the article as a step forward towards the goal of standardization of TCM theory for PD, while we believe plenty of works remains to be done in order to ultimately achieve this goal.

## References

1. Armstrong MJ, Okun MS (2020) Diagnosis and treatment of Parkinson disease: a review. *Jama* 323: 548-560.
2. Reuters T (2015) Disease Review: Parkinson's disease. *International Journal of Pharmaceutical Research* 42: 338-345.

3. Singh N, Pillay V, Choonara YE (2007) Advances in the treatment of Parkinson's disease. *Progress in neurobiology*. 81: 29-44.
4. Walter BL, Vitek JL (2004) Surgical treatment for Parkinson's disease. *The Lancet Neurology*. 3: 719-728.
5. Jing ZL, Qian LY, Hua HX, Yuan WY (2019) Research progress on clinical efficacy of traditional Chinese medicine on Parkinson's disease and related signaling pathways. *Chinese Journal of Traditional Chinese Medicine* 47: 124-149.
6. Chen P, Zhang J, Wang C, Chai YH, Wu AG, et al. (2022) The pathogenesis and treatment mechanism of Parkinson's disease from the perspective of traditional Chinese medicine. *Phytomedicine*. 100: 154044.
7. Wu S, Wu H, Jiang X, Li H, Luo J (2023) Data mining analysis of professor Qiu Changlin's Chinese Medicinal therapy for Parkinson's disease. *Medicine Advances* 1: 270-277.
8. Commission CP (2020) *Pharmacopoeia of the People's Republic of China*. China.
9. Shanghai Science & Technology (1999) *Medicine AECotABoTC: Materia chinensis (Zhonghua Bencao)*. Shanghai Science & Technology Press, China.
10. Zhenxiang TDZ (2020) *Chinese Materia Medica*. China Press of Traditional Chinese Medicine, China.
11. Zhao Y, Xie Q, He L, Liu B, Li K, et al. (2014) Comparison analysis of data mining models applied to clinical research in Traditional Chinese Medicine. *Journal of Traditional Chinese Medicine* 34: 627-634.



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