

# Research Progress on Traditional Chinese Medicine Constitution Analysis of HIV Infected Persons after HAART Treatment

Qinsi Dong, Miao Zhou, Lan Li, Yanan Shang\*

Traditional Chinese Medicine Hospital of Meishan, Meishan 620010, Sichuan, China

\*Correspondence Author

**Abstract:** *AIDS, as a newly emerging malignant infectious disease with a high fatality rate and no cure, is a global public health problem. Traditional Chinese medicine treatment of AIDS has significant advantages, in addition to individualized syndrome differentiation, physical treatment is also a major feature of traditional Chinese medicine. Based on the research status of traditional Chinese medicine constitution of HIV infected persons after HAART treatment, this paper conducted a preliminary study on traditional Chinese medicine constitution of HIV infected persons after HAART treatment, and a preliminary discussion on the regulation and treatment of traditional Chinese medicine constitution, in order to provide new ideas for the prevention and treatment of AIDS by traditional Chinese medicine.*

**Keywords:** HIV, HIV/AIDS, HAART treatment, TCM constitution.

## 1. Introduction

AIDS, or acquired immunodeficiency syndrome, it's caused by the human immunodeficiency virus, also known as HIV. AIDS is one of the important public health problems affecting public health. The Joint United Nations Programme on HIV/AIDS estimates that there were 39 million living HIV/AIDS patients worldwide at the end of 2022, with 1.3 million new HIV infections that year. 29.8 million people are receiving antiretroviral therapy [1]. Modern medicine mainly includes highly active combined antiretroviral therapy (HAART), which rapidly reduces viral load and promotes immune reconstitution, thereby reducing AIDS-related complications and mortality [2,3]. Moreover, it can reduce the spread of AIDS and is currently the preferred treatment for AIDS at home and abroad [4]. With the deepening of HAART treatment, HIV virus has been basically controlled in the body. After HAART treatment, syndrome differentiation and classification are carried out according to the constitution of traditional Chinese medicine, giving full play to the characteristics and advantages of traditional Chinese medicine in the treatment of AIDS [5,6]. According to the constitution of traditional Chinese medicine, the difference of constitution will affect the susceptibility to disease and the tendency in the development of disease. In order to further explore the characteristics of traditional Chinese medicine constitution of HIV-infected people after HAART treatment, find out the common rules, and carry out the research on the identification of traditional Chinese medicine constitution of HIV-infected people after HAART treatment. In order to provide new ideas and new methods for TCM treatment of HIV/AIDS.

## 2. The Related Influence of Physique on AIDS

### 2.1 Physical Constitution Affects the Occurrence, Development and Syndrome Types of AIDS

The occurrence of AIDS and whether infected with HIV virus has an inevitable relationship. However, relevant scholars have found through observation that whether people are

infected with HIV after unprotected sexual contact with HIV carriers is greatly related to the differences between people and their individual constitutionally [7]. The strength of physique represents the strength of positive Qi to a large extent, and in the process of fighting against HIV, the strength of physique is a process of movement change. Disease development is slow, the prognosis is better, often have a strong physique, full of healthy qi; Those with rapid disease transmission and poor prognosis tend to have poor physique and insufficient healthy qi. The classification standard of TCM physique is divided into 9 types with reference to literature [8], which are Pingping quality, Qi deficiency quality, Yang deficiency quality, Yin deficiency quality, phlegm-dampness quality, damp-heat quality, blood stasis quality, qi stagnation quality and characteristic quality. Tang [9] explored the influence of physique on the development of AIDS and found that the natural clinical course after HIV infection may be influenced by the nature of the recipient.

Constitution not only determines the occurrence of syndrome, but also affects the nature of syndrome [10], Different physical conditions have a direct impact on the types of syndromes of AIDS clinical incidence [11]. Qin [12] adopted a cross-sectional study method, included 1007 cases and classified TCM syndrome differentiation and physique, and found that deficiency syndrome of HIV/AIDS is more common in people with deficiency constitution, and there is a correlation between TCM syndrome differentiation and physique type. Mou [13] conducted a study on the correlation between physique and syndrome of AIDS patients, and found that Qi-deficiency, damp-heat quality were significantly positively correlated with spleen-lung Qi-deficiency syndrome. Dampness-heat and Qi-deficiency were positively correlated with liver-gallbladder dampness-heat syndrome. Phlegm and dampness were positively correlated with the syndrome of phlegm and dampness accumulation, and positively correlated with spleen-lung qi deficiency syndrome. From the above research results, it can be seen that the physical type of AIDS patients and the mechanism of syndrome formation are basically consistent, and the two complement each other and are closely related.

## 2.2 Physique Affects the Treatment Effect and Quality of Life of AIDS Patients

HAART, as a universally recognized antiviral therapy for HIV/AIDS, has definite clinical efficacy, but long-term drug resistance and adverse reactions gradually appear, and the quality of life of patients has declined to varying degrees. The effect of immune reconstitution varies from person to person and is affected by individual physical differences. Traditional Chinese medicine has obvious clinical efficacy in improving patients' clinical symptoms, enhancing patients' immunity, improving patients' quality of life, and delaying the onset of AIDS. AIDS has not been recorded in traditional Chinese medicine, and modern Chinese medicine classifies it as "deficiency fatigue" and "epidemic disease". The appearance of clinical symptoms of AIDS patients is closely related to the strength of the patient's physique. Traditional Chinese medicine believes that AIDS is caused by external infection and virus, which damages the vitality over time, and the deficiency of vitality leads to deficiency of healthy qi, and the deficiency of qi, blood and Yin and Yang of the five viscera in the long run. Physique is a comprehensive and relatively stable inherent characteristic of the form structure, physiological function and psychological state formed in the course of human life on the basis of innate endowments and acquired abilities [14]. Gao Peiyuan conducted a TCM constitution survey on 444 HIV-infected patients who had received antiviral treatment for more than 6 months, and divided them into the virological failure group and the control group according to the plasma viral load. Through comparative analysis of the constitutions of the two groups, it was found that the constitutions of HIV-infected patients in the virological failure group were mainly five or more mixed constitutions. The biased constitution with high frequency is Yang deficiency and Qi stagnation [15]. Liu Jianzhong conducted a study on the relationship between physique and quality of life of AIDS patients initially treated, and found that Qi-deficiency quality scored lower than other types of physique in terms of quality of life, physical state and psychological state, and the difference was statistically significant [16]. The above research results suggest that adjusting the biased constitution of AIDS patients, early intervention, so as to prevent disease, can improve the curative effect, improve the quality of life of patients, and make the disease develop slowly.

## 3. Study on Traditional Chinese Medicine Physique of HIV Infected Persons after HAART Treatment

### 3.1 Study on TCM Physique Types of HIV Infected Persons after HAART Treatment at Different Ages

Age is one of the important factors affecting the progression and outcome of HIV infection after HAART treatment, and it is also one of the important factors affecting the human body constitution. Young and middle-aged people have strong physiological function, sufficient qi and blood, strong physique, and are not susceptible to disease. The physiological function of the elderly is decreased, qi and blood deficiency, weak physique, easy to get sick, and the disease is mainly caused by deficiency syndrome or deficiency and accumulation. The results of relevant studies

suggest that there are differences in the physical types of HIV infected persons after HAART treatment at different ages. Zhao Tianying used the standardized 9 kinds of TCM physique classification scale to identify the TCM physique of 433 patients infected with HIV after HAART treatment in Gansu Province, and analyzed the correlation between the physique type and age distribution [17]. In the age group below 20 years old, the most frequent physical condition was Yang deficiency. In the age group of 21 ~ 30 years old, Qi-stagnation was the most frequent physical condition. In the age group of 31~40 years old, Qi-deficiency was the most frequent physical condition. In the age group of 41~50 years old, the most frequent physical condition was Qi stagnation. In the age group of 51~60 years old, Qi-deficiency was the most frequent physical condition. In the age group over 60 years old, the most frequent physical condition was Yang deficiency. The frequency of physical occurrence of HIV infected persons after HAART treatment is significantly different in different age groups, which is of great significance for the prevention and control of the disease development of HIV infected persons with traditional Chinese medicine.

### 3.2 Research on the Correlation between TCM Constitution and Immune Indexes of HIV Infected Persons after HAART Treatment

The viral load and CD<sub>4</sub><sup>+</sup> T lymphocyte count in the plasma of AIDS patients have become important indicators for evaluating the condition of AIDS patients, predicting the clinical progress, guiding the antiviral treatment of AIDS patients, and evaluating the efficacy of anti-HIV drugs. Yu Chong summarized and analyzed the clinical data of 48 patients with HIV/AIDS, there was no significant difference in HIV-RNA load between patients with virtual constitution and those with solid constitution before and after treatment ( $P>0.05$ ). Before treatment, vacuity constitution had lower CD<sub>4</sub><sup>+</sup> T lymphocytes than solid constitution, with lower percentages of Th1, Th17 and Th22, while Th2 and Treg accounted for higher percentages of CD<sub>4</sub><sup>+</sup> T cells, and the difference was statistically significant ( $P<0.05$ ), TCM constitution affected the progression of HIV/AIDS [18]. Gao Peiyuan analyzed the correlation between traditional Chinese medicine constitution and viral load of HIV/AIDS patients after HAART treatment, and found that the number of viral load of AIDS patients was correlated with the type of physique. The more complex the type of physique combined with the type of physique, the higher the viral load [19]. Mo Xiaoying found that the levels of CD<sub>4</sub><sup>+</sup> and CD<sub>4</sub><sup>+</sup> T lymphocytes in Qi-deficient patients were significantly lower than those in Qi-deficient patients. The top 4 constitutions with higher HIV-RNA were Yin deficiency, damp-heat deficiency, Yang deficiency and Qi-deficiency, but there was no statistical significance in the comparison among different constitutions [20]. The above studies showed that the CD<sub>4</sub><sup>+</sup> T lymphocyte count of HIV patients with qi-deficiency was low. HIV/AIDS patients with different physical types have different viral loads.

## 4. Adjustment of TCM Constitution of HIV Infected Persons after HAART Treatment

After HAART treatment, the viral load of some HIV infected people does not decrease or increases after decreasing, which

is determined by individual physical differences from the perspective of traditional Chinese medicine physique. Constitution determines the pathogenesis of disease, the so-called "conghuating", that is, the disease changes with the constitution. When the human body suffers from the etiology, due to the particularity of constitution, different types of constitution have different potential and relatively stable tendencies, which can be called qualitative potential, that is, corresponding pathological changes occur in the body, and different etiologies have different pathological characteristics. This pathological evolution trend is called disease potential, and the combination of disease potential and qualitative potential will cause different changes in pathological properties. This disease potential depends on qualitative potential and transforms from constitution, which is called qualitative transformation. As Zhang Xugu said in "Medicine Men bar Drink, six Qi Yin and Yang Theory", "Evil Yin and Yang, with the Yin and Yang of the human body change also", because of the temperament of Yin and Yang, zang-fu have strong and weak, so the body to the pathogenic factors have cold, heat, dampness, dryness and other differences.

Therefore, when HIV enters individuals with different constitutions of Chinese medicine, it occurs and develops into different diseases, and there are different clinical symptoms and signs, and the clinical efficacy of the same drug is also different. AIDS patients all use HAART treatment, but the results are not the same, some patients in the body of the virus is completely suppressed, clinical detection, and some patients in the body of the virus is still in a large number of reproduction, that is, modern medicine clinical said drug resistance. It can be seen that the difference of individual physique is an important reason for the failure of antiviral treatment. According to the adjustable theory of TCM physique, the failure of HAART can be alleviated or prevented by changing the TCM physique of AIDS patients, so as to improve the treatment rate, which is worthy of further study. At the same time, this also provides a new idea for TCM intervention of HIV resistance. The adjustment of AIDS physique can be started from drug adjustment, diet adjustment, massage points, and mood adjustment. The method of diet adjustment and acupressure has the characteristics of strong operability, simple and safe, which is especially suitable for the adjustment of AIDS biased physique.

#### **4.1 Adjustment of Virtual Constitution of HIV Infected Persons after HAART Treatment**

The strength of physique is closely related to the strength of healthy qi and the strength of human immunity. The treatment method of invigorating spleen and kidney to aid the recovery of healthy qi is conducive to the recovery of patients' immune function [21]. Modern research has confirmed that the spleen of traditional Chinese medicine is closely related to the immune system of Western medicine. When the spleen and stomach are weak, the immune system of the human body will also undergo abnormal changes. Chinese medicines with beneficial effects on qi and spleen can improve the immunity of the human body [22-23]. Xu Liran put forward the theory that AIDS is based on "Qi deficiency" and "spleen is the cardinal"[24-25]. Wang Shuang believe that AIDS is based on kidney deficiency, epidemic virus as the standard, kidney qi is full of healthy qi, nourishing kidney essence, regulating and

tonifying kidney Yin and Yang can enhance the body's healthy qi to resist HIV [26]. After HAART treatment, the deficiency constitution of HIV infected persons can be adjusted by strengthening the spleen and tonifying the kidney. Daily can be used under the guidance of doctors tonifying kidney or spleen Liuwei Dihuang pills, Zhibai Dihuang pills, Qiju Dihuang pills, Jinkui kidney pills, left GUI pills, right GUI pills, four Junzi decoction, Lizhong pills, Buzhong Yiqi pills and other tonifying spleen and kidney. The medicinal food with the beneficial effect can be selected from the "Shengji General Record" astragalus porridge, "Shenqiao Wanquan" yam porridge, "Chinese Medicinal food Dictionary" GUI Qi soup, "Compendium of Materia Medica" Ciche mutton porridge and so on. Acupoint massage: Qi deficiency quality can choose with the function of strengthening the spleen and qi Zusanli, Pishu, Qi Hai, Guanyuan and other acupoints; Yin deficiency can be selected with the function of nourishing Yin and tonifying kidney Sanyinjiao, Shenshu, Taixi, Yongquan and other points; Acupoints such as Guanyuan, Qihai, Yongquan, Baihui and Mingmen can be selected for Yang deficiency [27].

#### **4.2 Adjustment of Physical Constitution of HIV Infected Persons after HAART Treatment**

After HAART treatment, the adjustment of qi stagnation in the physical constitution of HIV infected persons can be started from the aspects of regulating mood, relaxing mood and avoiding bad mood. First of all, psychological counseling and guidance can be sought: When the patient knows the infection of HIV, the psychological pressure is large, there may be anxiety, depression and other tendencies, over time may lead to the formation of qi Qi, at this time should seek help as soon as possible professional psychologists, using the treatment of Qi qi qi treatment method, such as Xiaoyao pills, Jiayu pills, Shugan Jiayu capsules and other drugs, so that stagnation, mood relief, followed by a positive way to release pressure. Moderate exercise can improve emotions. Traditional Chinese exercise therapy is a kind of active therapy to enhance the body's positive qi and resist external evil. It is characterized by soft movements and slow rhythm, and belongs to the coordinated exercise of medium and low intensity, which can improve insomnia, depression, irritability and other diseases [28]. Modern research has confirmed that Baduanjin has the effects of regulating lung qi, stimulating and lengthening the lifespan, and soothing heart pulse [29]. In addition, you can do some beneficial physical and mental things, such as raising flowers, raising fish, listening to music, etc., to promote Qi and blood harmony, physical and mental rehabilitation to adjust qi stagnation quality. Spleen is the source of phlegm. Combining with the pathogenesis and characteristics of AIDS, the adjustment of dampness-heat and phlegm-dampness in the solid constitution of HIV infected persons after HAART treatment should focus on strengthening the spleen. The method of invigorating spleen, clearing heat and removing dampness can be used to adjust the quality of dampness. The method of invigorating spleen and removing phlegm and dampness can be used to adjust the quality of phlegm and dampness. Wet and hot quality and phlegm wet quality in the diet can choose to eat Job's tears, mung beans, white lentils, red beans, bitter melon, winter melon and other foods, while with the consumption of yams, lotus seeds and so on. AIDS moist heat quality can be selected

with the role of clearing heat and dampness Quchi, Dazhui, Yanglingquan and other points, at the same time can be added with spleen spleen Shu massage, phlegm wet quality can be selected with spleen and phlegm dehumidification function of Zusanli, Fenglong, Chengshan and other points for massage.

## 5. Summary

The occurrence, development and outcome of HIV infection after HAART treatment are affected by the receptor. Most of the studies on the TCM constitution of AIDS remain in the type of the TCM constitution of AIDS, the correlation between the TCM constitution of AIDS and the immune index, and most of them are small samples and a single region. In addition, there are few studies on the application of the constitution theory to the treatment of AIDS. Therefore, the next step is to carry out a large-sample, multi-center study of traditional Chinese medicine physique of HIV/AIDS after HAART treatment, in order to make a more systematic evaluation of the physique type of AIDS, and conduct a treatment study combining physique and syndrome, and evaluate the efficacy. After HIV infection, the physical type of patients may have certain changes, from the physical point of view to explore the development of AIDS changes, the use of traditional Chinese medicine physical theory advantages, give full play to the characteristics of traditional Chinese medicine treatment of AIDS advantages, so that traditional Chinese medicine full of new vitality.

## Acknowledgements

This paper is supported by the fund: Study on the correlation between TCM constitution characteristics and immune reconstitution in HIV infected patients after HAART treatment (Project No. kjzd202227).

## References

- [1] UNAIDS. Global HIV & AIDS statistics: Fact sheet [EB/OL]. (2023-11-02) [2024-02-16]. <https://www.unaids.org/en/resources/fact-sheet>.
- [2] Xie Ruiqing, Ke Xianzhou, Qian Zushu. Survival of HIV/AIDS patients receiving highly antiretroviral therapy in Huangshi, Hubei, 2003-2018 [J]. *China Tropical Medicine*, 2020,20(2):142-147.
- [3] Caillaud SA, Escarra F, Mecikovsky D, et al. Adherence assesment to highly active antiretroviral therapy (HAART) in adolescents living with HIV in a transition clinic en Buenos Aires, Argentina[J]. *IJID*, 2018, 73(3): 234.
- [4] Eisinger RW, Dieffenbach CW, Fauci AS. HIV viral load and transmissibility of HIV infection[J]. *JAMA*,2019,321(5):451-452.
- [5] Xu Xiangqian, Xu Qianlei, Jin Yantao, et al. Review of research in the regulation on immune function of HIV/AIDS patients with traditional Chinese medicine in the post-HAART period[J]. *China Journal of Traditional Chinese Medicine and Pharmacy*, 2018,33(3):829-832.
- [6] Xu Qianlei, Li Qingya, Jin Yantao, et al. Breakthrough Point of Chinese Medicine and Pharmacy for HIV/AIDS Prevention and Treatment in the Post-HAART Period[J]. *Chinese Journal of Integrated Traditional and Western Medicine*, 2016,36(9):1128-1131.
- [7] Zhang Yaping, Deng Xin, Li Yongliang, et al. Chinese Medicine Prevention and Treatment of AIDS in Terms of Constitution Theory[J]. *Chinese Journal of Integrated Traditional and Western Medicine*, 2011, 31(10): 1422-1424.
- [8] Chinese Association of Traditional Chinese Medicine. Classification and Judgment of Traditional Chinese Medicine Constitution (ZYYXH/T157-2009) [S]. China Traditional Chinese Medicine Press, 2009:60.
- [9] Tang Ningxin, Ou Jian, Chen Wan, et al. Study on the correlation between TCM constitution and HIV infection course in young and middle-aged people in Guangxi[J]. *Heilongjiang Journal of Traditional Chinese Medicine*, 2013,42(4): 18-20.
- [10] Wang Danni, Xu Liran, Guo Huijun. Start with the constitution of traditional Chinese medicine to broaden the idea of AIDS syndrome research[J]. *JOURNAL OF BASIC CHINESE MEDICINE*, 2016, 22(12): 1652-1653.
- [11] Xu Qianlei, Xu Xiangqian, Wu Xingwei, et al. Theoretical discussion of the physical constitution theory applied to the HIV/AIDS treatment[J]. *China Journal of Traditional Chinese Medicine and Pharmacy*, 2014,29(4):1151-1153.
- [12] Qin Guozheng, Li Qingsheng, Zhang Chunhe, et al. Research brief on the pathogenesis of AIDS and the establishment of TCM syndrome database[J]. *Journal of Yunnan University of Traditional Chinese Medicine*, 2008(2):43-45.
- [13] Mou Fangzheng, Gong Xue, Wei Darong, et al. Study on the correlation between physical fitness types and syndromes of 101 AIDS patients receiving HAART[J]. *Chinese Journal of Aids & STD*, 2017,23(10): 880-882.
- [14] Wang Qi. Constitutionology of traditional Chinese medicine[M]. People's Medical Publishing House, 2009:134-136.
- [15] Gao Peiyuan, He Qiong, Tuo Changyu, et al. Investigation on TCM Constitution of Virological Failure in HIV/AIDS Patients with Highly Active Anti-retroviral Therapy[J]. *Chinese Primary Health Care*, 2019,33(11):87-88-91.
- [16] Liu Jianzhong, Chen Yao, Xiao Mingzhong. Study on the relationship between TCM constitution classification and quality of life of 114 patients with AIDS[C]. Chinese Association of Traditional Chinese Medicine,2017:133-135.
- [17] Zhao Tianying, Tuo Changyu, Xu Chunmao, et al. Study on TCM physique characteristics of 433 cases of HIV infected in Gansu province at different ages[J]. *Chinese Journal of Clinical Research*, 2015,28(01):131-133.
- [18] Yu Chong, Li Xuemei, Wang Zongcheng, et al. Clinical Study of HAART Therapy for AIDS Patients with Different TCM Constitution[J]. *Acta Chinese Medicine*, 2016,31 (11):1629-1632.
- [19] Gao Peiyuan, He Qiong, Tuo Changyu, et al. Study on the correlation between TCM constitution and viral load after HAART therapy in 444 HIV/AIDS patients[J]. *China Journal of Traditional Chinese Medicine and Pharmacy*, 2020,35(8):4168-4170.
- [20] Mo Xiaoying, Wang Meihua, Shan Xiaoliang, et al. Correlation between Traditional Chinese Medicine Constitution Types and T Lymphocyte Subsets and HIV-RNA in HIV Infectors/AIDS Patients[J]. *Shandong*

- Journal of Traditional Chinese Medicine, 2020, 39(5): 477-481.
- [21] Zhu Jianguang, Wang Hailiang. Discussion on the method of warming and tonifying the spleen and kidney in the treatment of hematotoxicity caused by HAART[J]. China Journal of Traditional Chinese Medicine and Pharmacy, 2019,34(8):381-3813.
- [22] Xiu Zongchang, Yu Shaoyuan, Luo Yunjian. On Immunological Basis for “Reinforced Spleen Preventing Invasion of Pathogenic Factors” [J]. Jiangsu Journal of Traditional Chinese Medicine, 2003(1):43-44.
- [23] Gao Xiulan, Zhang Guangxia, Xie Ming. Effects of different Jianpi prescriptions on gastrointestinal, thyroid and immune functions in rats with spleen deficiency syndrome[J]. Pharmacology and Clinics of Chinese Materia Medica, 2016,32(3): 16-19.
- [24] Xu Liran, Li Huan, Chen Guanzheng. Discussion on Qi Insufficiency Being the Basic Pathogenesis of AIDS[J]. Acta Chinese Medicine, 2010,25(2):196-197,199.
- [25] Xu Liran, Li Huan, Chen Guanzheng. The Recognition of the Spleen as Pivot of AIDS[J]. Liaoning Journal of Traditional Chinese Medicine, 2010,37(9):1675- 1676.
- [26] Wang Shuang, Guo Yongjie. Overview of TCM prevention and treatment of AIDS[J]. Liaoning Journal of Traditional Chinese Medicine, 2009,36(7):1243-1245.
- [27] Chen Juan, Zhou Chunjiao, Bai Zunguang et al. Effect of constitution nursing by TCM on urinary salt scaling and tract infection in patients with ureteral stents[J]. Modern Clinical Nursing, 2018,17(1):38-41.
- [28] Yuan Chengrui, Tao Ping. The role of traditional exercise therapy in overall health[J]. Chinese Journal of Gerontology, 2020,40(24):5344-5348.
- [29] Yan Xianni, Chen Ruifang. Discussion on the relationship between fitness Qigong Baduanjin and traditional Chinese medicine health treatment[J]. Hunan Journal of Traditional Chinese Medicine, 2017, 33(9): 135-136.