

# *Current Status of Chinese Medicine Diagnosis and Treatment of Dwarfism*

Fan Yafei<sup>1,a</sup>, Zhang Qiang<sup>1,b</sup>, Guo Yaxiong<sup>2,c,\*</sup>

<sup>1</sup>*Shaanxi University of Chinese Medicine, Xianyang, Shaanxi, 712046, China*

<sup>2</sup>*Affiliated Hospital of Shaanxi University of Chinese Medicine, Xianyang, Shaanxi, 712000, China*  
<sup>a</sup>648397447@qq.com, <sup>b</sup>1297962786@qq.com, <sup>c</sup>gyg200410@163.com

\*Corresponding author

**Keywords:** Dwarfism; traditional Chinese medicine; etiology and pathogenesis; diagnosis and treatment; external therapeutic method

**Abstract:** With the progress of social and economic development, people's attention to pediatric height is increasing. As a common disease in modern medical treatment, dwarfism is still lacking in its related prevention and treatment. The purpose of this paper is to summarize and analyze the pathogenesis of dwarfism through the study of Chinese medicine literature related to dwarfism in recent years, and to make corresponding treatments for its pathogenesis, with a view to providing theoretical help for clinicians in the treatment of dwarfism.

## 1. Introduction

Dwarfism or short stature is defined as the height of individuals of the same race, sex and age who are less than two standard deviations (-2SD) from the average height of the normal population, or less than the 3rd percentile (-1.88SD) in similar living environments [1]. Recently, with the Chinese Journal of Practical Pediatrics sponsored by the Chinese Children's Idiopathic Dwarfism Diagnosis and Treatment Expert Consensus conference held successfully in Beijing, children's dwarfism has once again become a hot topic. Public information shows that the incidence of childhood dwarfism in China is about 3% [2], the prevalence of male children is higher than that of female children, and the prevalence of children in rural areas is higher than that of children in urban areas. At the root of the problem, it is mainly due to the lack of publicity and the lack of a clear understanding of childhood dwarfism, and most of the children cannot be treated in a timely manner, which has made the disease a major enemy that jeopardizes children's health, following childhood obesity and precocious puberty. Most of the children with dwarfism suffer from different degrees of low self-esteem, depression, social withdrawal and other psychological or behavioral disorders, which can subsequently affect their education, communication, employment, marriage and other life events. Therefore, a breakthrough in the prevention and treatment of this disease is urgently needed. Western medical research has pointed out that dwarfism occurs due to various factors, among which growth hormone deficiency, idiopathic short stature, familial short stature, and congenital hypothyroidism are more common. According to the different causes of its pathogenesis, clinical treatment is based on recombinant human growth hormone, aromatase inhibitors, calcium, iron and other drug therapy [3].

Although the efficacy of western medical treatment is accurate, it is controversial in clinical application: on the one hand, it is expensive, and the technical requirements for operation are high, especially for the rural children with more shackles; on the other hand, the clinical application of tracking found that there is individual variability in hormone therapy, and some of the children with poor or even ineffective results; at the same time, the long-term application of hormone-induced obesity, susceptibility, and other side effects need to be paid attention to. Chinese medicine based on the overall concept of disease, in line with the principle of treatment must be sought in the principle of evidence-based treatment, has the advantages of flexible use, side effects can be controlled, inexpensive and effective, so in the clinical treatment of dwarfism can be tapped to seek Chinese medicine characteristics of treatment. At present, the clinical treatment of dwarfism in traditional Chinese medicine is mostly based on oral Chinese medicine, together with acupuncture, massage, acupoints paste and other external treatment methods, although the therapeutic effect is remarkable, but each doctor discusses differently, the lack of systematic, standardized diagnostic and treatment programs, which is not conducive to the promotion of the application of vigorously. The purpose of this paper is to summarize the etiology and pathogenesis of dwarfism in Chinese medicine, the dialectical classification, internal and external treatments, in order to provide theoretical and dialectical basis for the clinical treatment of dwarfism.

## 2. Chinese medicine literature records of dwarfism

Dwarfism is a kind of endocrine system disease with growth retardation and short stature as the main clinical manifestation, and there is no direct record of the name of dwarfism in the ancient Chinese medical books. Its related discussions can be scattered in the five late five soft, fetal cowardice, fetal weakness and other diseases recorded, so some medical practitioners will be attributed to it. However, the so-called five delays refer to the delays in standing, walking, talking, hair growth and tooth eruption; the five soft refers to the softness of the head, mouth, hands, feet and muscles. Five soft refers to soft head, soft mouth, soft hands, soft feet, and soft teeth; five soft refers to soft head, soft mouth, soft hands, soft feet, and soft teeth; five soft refers to soft head, soft mouth, soft hands, soft feet, and soft teeth; five soft refers to soft head, soft mouth, soft hands, soft feet, and soft teeth. There are also records in the "Essay on the Origin and Symptoms of Various Diseases" such as "teeth not being born", "not being able to walk for several years", "hair not being born", and "not being able to speak at the age of four or five", etc. The five softnesses of the child are also described in the "Cranial fontanel scripture". "And other records, five soft can be seen in the "pediatric drug evidence straight secret": "grow up not, walking is soft feet, teeth long time not born, born is not solid, hair long time not born, born is not black" and other records. The five late five soft can appear alone, but also often see each other, not discussed here. However, modern clinical research has found that although both dwarfism and five-late-five-soft are characterized by growth retardation, their clinical manifestations are not the same, and while the developmental retardation of dwarfism is mainly reflected in the height, the five-late-five-soft encompasses a much wider range of conditions, and therefore the two cannot be generalized.

Chen Fuzheng is "young integrated" fetal disease chapter on fetal weakness, fetal timidity to make a detailed discussion: "fetal weakness, endowed with insufficient gas also." "Fetal timidity, born below the lack of light, thin muscles, stool white and bloodless body, the eye is not wonderful, when choking more retch, this is the treatment of timidity." It is pointed out that the onset of fetal disease is mainly due to the lack of innate endowment, lack of vital essence, acquired care disorders, qi and blood difficult to raise. Modern medicine will be fetal cowardice, fetal weakness of the two into one, unified generalization for the newborn low birth weight, short stature, viscera and organs are not full of a disease, part of the fetus disease in the late stage of the child can be seen intellectual development

disorders. Dwarfism is common in adolescent children, although the fetal history has a certain impact, but not the main reason, and most of the children do not have intellectual changes, so it will be attributed to the flow of fetal weakness, fetal cowardice is not desirable.

In addition, there are also some medical practitioners attribute it to the categories of deficiency labor and chancre [4], but it is not difficult to find the differences through the study. Although this disease is not well documented in the literature, the etiology and mechanism of dwarfism and its treatment are still enlightening to later generations, such as the Spiritual Pivot, which points out that this disease is closely related to the essence of the innate parents; the Origin and Currents of Diseases points out that the kidney essence and bones are crucial to human growth and development; in addition, the Dihuang Pills recorded in the Jinjian of the Medical Academy and the Supplementary Zhongyiqi Soup are also quite effective for this disease, which is worthy of further excavation and application.

### 3. Chinese medicine etiology of dwarfism

Chinese medicine believes that this disease is due to congenital insufficiency and acquired nutrient deficiency. The disease is located in the brain, kidneys, bones and their accessory structures, and the nature of the disease is weak. The basic mechanism of the disease is that the essence and marrow in the kidneys are insufficient, the bones are not nourished, and the growth is inhibited. The so-called innate that is endowed with the parents of the innate essence, if the mother of insufficient nutrition during pregnancy or infections during childbirth can lead to the fetus innate weakness, kidney essence is not full, the kidney is the "foundation of the innate", the main bone marrow to promote growth, the lack of kidney essence is the lack of source of bone marrow biochemical, growth is slow, and hair for this disease. The so-called acquired about the spleen and stomach healthy transport, spleen qi scattered essence, have the ability to transport the water and grain, the human body can be eaten into the water and grain into the survival of the essence of the material, and transported in all parts of the body. If the children after the diet is not regulated, like fat, sweet, thick and greasy products, resulting in the spleen and stomach transport function is impaired, the generation of qi and blood is insufficient, and then the organs of the nutrient supply is insufficient, the growth of the inhibition, the development of this disease. The Spiritual Pivot - Meridian" said: "people are born, the first into the essence, the essence into the brain after the medulla oblongata, bone for the dry, veins for the camp, tendons for just, meat for the wall." [5] "the origin of all diseases, " said: "Bone is the support of the medulla, if the endowment of the blood is not enough, that is, the medulla is not full of strong, so its bone is not immediately become." It suggests that the growth and development of the human body is closely related to the brain, kidney and bone, so the disease is located in the brain, kidney, bone and its accessory structures. The Spiritual Pivot" recorded: "infants, their meat brittle, less blood, gas weak", "Children's medicine straight" said "five organs and six bowels, into the full ..... full and not strong", "young science hair micro" also have children "blood is not full" "spirit of timidity" and other relevant statements. Intestines and stomach brittle thin "" spirit of timidity "and other related discussions, fully illustrates the growth of children's material foundation has been established, but the foundation is weak, still need to enrich and solid, so children's disease to the virtual common, and the onset of the disease is consistent with the nature of the disease. The "Su Wen Xuan Ming Five Qi Chapter" states: "The liver governs the tendons, the spleen governs the flesh, and the kidney governs the bones." The liver stores blood and governs the tendons, the spleen transports and transforms the flesh, the kidney governs the bone and marrow, and the three organs nourish. The human body's muscles and veins are strong, the muscles are full, and the bones are strong. On the contrary, congenital deficiency, combined with insufficient nutritional regulation or disease influence, can consume essence and blood, leading to liver and kidney deficiency, muscle and bone loss of nourishment, spleen deficiency, and

nutritional deficiency. Children may experience poor food intake, delayed development, and short stature.

On the contrary, congenital insufficiency, coupled with insufficient nutritional control, or the impact of disease, depletion of essence and blood, resulting in deficiency of the liver and kidney, sinews and bones of the loss of nourishment, lack of spleen qi, lack of nutrients, the child can be seen in the lack of good food and nutrition, developmental delays, short stature.

In addition, children often say three deficiencies and two surpluses, three deficiencies that is, lung, spleen and kidney deficiencies, so children are susceptible to external evils, the lung qi is not declared; easy to eat and drink stagnation, the spleen and stomach weakness; easy to kidney qi is not full, the foundation is not stable; the weakness of the three are the cause of the disease. Two surplus, i.e., the heart and liver, the liver stores blood, in the body and tendons, liver qi hyper is upwardly reversed, gas surplus is transformed into fire, liver fire burns the yin and blood, liver blood deficiency, tendons and bones are not nourished, which can also lead to slow growth and short stature. The heart is the master of blood, insufficient blood in the heart, the medulla oblongata is not nourished, then sleep at night is uneasy, easy to wake up, can also affect the growth and development [6].

According to Duan Juan [7], the onset of dwarfism originates from kidney deficiency and spleen deficiency, and is also associated with the heart and liver. Based on the concept that the kidney is the foundation of the innate nature, which contains the body's yin and yang, and is the main source of reproduction and development; the spleen unites the blood and is the main source of transportation, which is the source of qi and blood biochemistry for the latter; the liver unites the tendons in the body and is the main source of the body's tendons; and the heart is the main source of the body's blood, which is the main source of the body's tendons; and the heart is the main source of the body's blood, and hides the blood's qi, we believe that the height of people depends on the growth of the tendons, bones, and blood, and so the disease of shortness is located in the bone marrow, tendons and bones. And it is divided into four types: kidney qi deficiency, spleen and stomach weakness, heart and liver blood deficiency and yin deficiency and fire exuberance. Clinically, the weak spleen and stomach type is common, or with heart and liver blood deficiency, kidney qi insufficiency is second, yin deficiency and fire type is rare. It is advocated to analyze which of the four is more or less important from the three aspects of growth rate, fat-muscle ratio, and special shape of the face, and treat the symptoms according to the results of the analysis.

Zhang Yu et al. [8], under the guidance of Ye Jin, believed that the treatment of childhood dwarfism should be centered on the spleen. The spleen is located in the middle energizer and regulates the energy of transportation and transformation. The spleen and stomach can vaporize the ingested water and grain substances into essence such as qi, blood, essence, and body fluid, and transmit them to the organs and orifices of various organs to nourish the whole body. Therefore, the transportation and transformation of the spleen and soil is the foundation for nourishing the four sides and limbs. It is believed that dwarfism is often caused by the indulgence of parents, improper feeding, and lack of energy and blood biochemical sources. Based on the concept that the spleen regulates the four organs, the spleen is prosperous during the four seasons, and the remaining organs are flat, it is believed that this disease should take the spleen first, or benefit the qi and promote the spleen, Or to dissipate dampness and promote spleen circulation.

Dai Xiaoyu [9] started from "if the form is insufficient, warm it with qi", pointing out that yang is the driving force of children's growth and development, and spleen yang is the foundation of children's growth and development. The physiological characteristics of the child's young yin and young yang determine that its growth and development depends on the promotion and warmth of yang qi in the body. Sufficient yang qi, promote powerful, the child's growth and development is rapid. On the contrary, the lack of yang qi, qi, blood and fluid running weak, which in turn affects the hypothalamus pituitary gland secretion of growth hormone, ultimately leading to slow growth in

height, hair for short.

Based on the concept of "the sun is the master of skin, the yangming is the master of flesh, and the shaoyang is the master of bone", Wang Qian et al. [10] believed that the pathogenesis of dwarfism should be analyzed from the shaoyang dialectic. "Spring March, this is called hair Chen, heaven and earth are born, everything to glory." And children's growth and development in the spring is also the fastest growth; at the same time, the foot Shaoyang bile meridian from the head to go foot, circulating parts of the body involved in most of the bones and joints, Shaoyang raw raw gas infusion in the bone through the meridian, can promote the growth of bones, joints strong, so that the Shaoyang of the gas in the bone, strong bone, it is called the Shaoyang main raw bone. It also puts forward the concept of preventing and treating children's short stature from the perspective of regulating the Shaoyang.

## 4. Chinese medicine treatment of dwarfism

### 4.1. Internal treatment of Chinese medicine

Dwarfism is characterized by short stature, slow growth rate, delayed bone maturation and metabolic abnormalities. Due to the lack of relevant ancient literature, there is a lack of authoritative and systematic clinical treatment. Modern medical practitioners mostly start from its symptoms, based on the whole, dialectical analysis. Chinese medicine pediatrics will belong to the five late five soft chapter, combined Chinese and Western medicine pediatrics can see dwarfism as an independent disease name exists. Clinical diagnosis and typing will be divided into two types: deficiency of liver and kidney and weakness of spleen qi, deficiency of liver and kidney is preferred to add flavor of six flavors of dihuangwan plus reduction to tonify the kidney and nourish the liver and strengthen the tendons and bones; weakness of spleen qi is preferred to benefit the qi to support the spleen and help transport.

Xiao Yao et al. [11] classified dwarfism into six types: kidney deficiency, spleen deficiency, spleen and kidney deficiency, spleen deficiency and liver exuberance, liver and kidney yin deficiency, and heart and kidney disorders according to different clinical manifestations of the children, and the former three are more common, so the treatment is also emphasized on the spleen and kidney. Kidney deficiency is divided into gas deficiency and kidney yang deficiency, the former with oyster, deer antler, wolfberry, the latter to the right angelica pill flavored; spleen deficiency to benefit qi to strengthen the spleen, and supplement the lung qi of the ginseng ling baijushu san plus subtraction; spleen and kidney deficiency follow the cultivation of the earth to generate gold, gold and water to generate the concept of self-proposed ginseng and turtle to help grow particles (ginseng, tortoise shells, roasted Astragalus, fried white atractylodes, Poria, Pachyderm) treatment. Those with liver and spleen disorders are treated by dredging the liver and strengthening the spleen; those with liver and kidney yin deficiency are treated by replenishing their yin and blood deficiencies; those with heart and kidney dysfunction are treated by Heavenly King's Heart Replenishing Pill to transport the heart and kidney.

Zhu Xiaoning et al. [12] found that Spleen and Kidney Double Complementary Formula (Radix Panax Ginseng, Poria, Rhizoma Atractylodis Macrocephalae, Radix et Rhizoma Glycyrrhizae, Radix Rehmanniae Praeparata, Rhizoma Zhi Materiae, Rhizoma Pinelliae, Rhizoma Oryzanthi, Rhizoma Oryzanthi, Rhizoma Polygonati, Cornu Cervi Pantotrichum, Rhizoma Zedoariae, and Rhizoma Pericarpium Citri Reticulatae) can increase the serum levels of IGF-1 and IGFBP-3, which are essential for the growth axis. The original formula is calmly tonifying the spleen and kidney, containing amino acids, trace elements and other nutrients needed by the human body, and has the effect of promoting bone development. The clinical efficacy of the formula compared with that of injection of recombinant human growth hormone reflects the superiority of the formula of spleen-kidney double tonic in terms of the total effective rate, the concentration of serum IGF-1, and the cost,

which is worthy of clinical popularization.

Chen Kingland et al. [13] that the treatment of dwarfism should focus on regulating the spleen and stomach, the human body qi and blood filling, muscle nourishment, the function of the five viscera and six bowels, all rely on the spleen and stomach transport function. Children's diet is not regulated, gradually hurt the spleen and stomach, the accumulation of stagnation in the long term, affecting the development, so the treatment should strengthen the spleen and transport the spleen, eliminating the accumulation of stagnation, the formula selected to strengthen the spleen pill plus subtractions. Once the stagnation is eliminated, the spleen and stomach can be transported, the qi and blood can run, the five organs can be nourished, the acquired nourishes the innate, and the development can be improved.

Wu Licheng et al. [14] developed the Growth 1 formula, which is composed of tai zi ginseng, fried *Atractylodes macrocephala*, *Poria*, *Astragalus*, Chinese yam, cornelian cherry, ripened Chinese rhizome, *Cuscuta chinensis*, tonic bone resin, wolfberry, mulberry branch, and roasted licorice. It is believed that the root cause of the onset of dwarfism is the deficiency of the kidneys and the weakness of the spleen, so the formula uses tai zi ginseng and ripened Chinese rhizome as the king to tonify the spleen and the kidneys, and is supplemented with the medicinal flavors such as benefitting qi to strengthen the spleen and the kidneys, which can improve the growth hormone levels of the blood of the affected children and achieve the goal of promoting the height increase. By increasing the concentration of growth hormone in the blood of the children, the total effective rate of the treatment can reach 83.3%, which is worthy of further clinical research and application.

In addition to conventional Chinese medicine soup, Prof. Xiao Heyin [15], based on the disease mechanism of children with dwarfism, which is insufficient in the spleen and kidneys, the liver is out of harmony and the Shaoyang pivot is unfavorable, created his own Jianjian Children's Growth Supporting Ointment to tonify the kidneys, support the spleen, nourish the liver and the blood, and harmonize the Shaoyang, which has a remarkable efficacy in clinical application. The cream is gentle, tonic-based, soft and easy to be accepted by children.

## **4.2. Traditional Chinese Medicine External Treatments**

### **4.2.1. Acupuncture therapy**

The four suture points have been widely used since ancient times as special points for the treatment of pediatric chancre. Bi Meifen et al. [16] found that acupuncture at the four suture points could promote the secretion of various types of enzymes in the intestinal tract, which in turn could promote intestinal peristalsis and increase the level of IGF-1 in the serum, which in turn could replenish the qi and blood of the children and promote their growth, and would not have any impact on the closure of the bone age.

### **4.2.2. Acupuncture Points Embedding Threads**

Chen Wei et al. [17] found that the total effective rate of this method for children with spleen qi deficiency and dwarfism was as high as 95% by burying threads in the acupoints of Ashansanli, Spleen Yu and Stomach Yu. As a widely used health point, the Foot Sanli can regulate the body's immune mechanism, so that the children can strengthen their spleen qi and enhance their physical fitness; the Spleen Yu and Stomach Yu, as the dorsal Yu points, take their yin disease to treat yang, and regulate the intestinal and gastrointestinal functions and endocrine functions of the children with spleen qi deficiency, so that they can achieve the therapeutic effect of increasing height naturally.

### **4.2.3. Moxibustion**

Moxibustion has the efficacy of supporting vital energy, tonifying the kidney essence,



strengthening the tendons and bones, and promoting the growth and development of children. Guo Yongcan et al. [18] used bamboo circle salt moxibustion therapy to tonify the kidney and strengthen the spleen, and achieved good efficacy in treating a child with ISS. The treatment points are divided into two groups, one group consists of qihai, zhongkou, shenque, guanyuan on the ren vein, and the other group consists of spleen yu, anointing, kidney yu on the bladder meridian and life gate on the dui vein; salt moxibustion has the effect of strengthening the spleen and stomach, stimulating the triple jiao qi and unclogging the human body meridians and collaterals, and the above points can be used to shorten the child's innate kidney qi deficiency and weakness of the spleen qi of the latter day, and then nourish the blood of the extremities to reach the The purpose of growth.

#### 4.2.4. Tui na therapy

Compared with traditional Chinese medicine soup, children with dwarfism have a higher compliance to tui na therapy, and this method of external stimulation of acupuncture points, dredging meridians and regulating internal organs has a low incidence of malignant events, which is beneficial and harmless to the long-term treatment. Xiang Hong et al. [19] promoted the recovery of the spleen and stomach in the middle jiao through the use of "regulating the pivot" massage (clearing and tonifying the stomach meridian, clearing and tonifying the spleen and earth, transporting the internal eight trigrams, pinching the spine, and kneading the abdomen), and the spleen was raised and the stomach lowered, which accelerated the growth rate of patients with idiopathic dwarfism and promoted the growth and development of the pediatric population.

#### 4.2.5. Acupressure/massage

Acupressure/massage is conducive to the regulation of hormone secretion in the body. Wu Liqin et al. [20] used acupoint compresses (medicinal flavor composition: Cangzhu, Muxiang, malt, cinnamon, fried Laixu Zi, etc.) and acupoint massage (Shenque, Guanyuan, Ashansanli, Vitality, Sanyinjiao, Kidney Yu, Yongquan, etc.) in treating idiopathic dwarfism in children and found that it could regulate hormone secretion in the body of the children, increase the concentration of serum IGFBP-3, IGF-1 and then achieve the purpose of increasing the height of the children.

#### 4.2.6. Auricular acupoint therapy

Feng Bing et al. [21] used acupoint massage (Ren Yu, Yongquan, Ashigaru, Guanyuan) combined with auricular pressure bean (kidney, endocrine, subcortical) to treat idiopathic dwarfism and found that this method could effectively enhance the concentration of insulin growth factor in the serum of the patients, accelerate the growth rate of the height, and reach the target height.

In addition, Hongyan Zhang, Lijiao Huang, and Yafang Chen [22-24] found that high-quality sleep, five-element music, and acquired dietary and exercise regulation have positive effects on hormone level stimulation in children with dwarfism, which is worthy of further clinical excavation and exploration.

Children's growth and development is a sophisticated and complex process, and clinical research over the years still lacks a systematic understanding of its pathogenesis. For many years, the GH-IGF-I axis has been in the center of attention, but although the use of growth hormone in Western medicine can achieve certain therapeutic effects, the treatment plan is too single, and the cost of treatment increases with the age and weight of the child, which creates a huge economic burden for the child's family. Chinese medicine treatment has obvious advantages over Western medicine treatment. First of all, the cost of TCM treatment is significantly lower than that of growth hormone, and not only does it come in different dosage forms such as soups, creams and pills, but it can also be used in conjunction with external TCM treatments to improve the physical condition of the child,

so that both parents and the child can choose different treatment options according to their own needs. Another advantage of TCM treatment is that it can be added and subtracted according to the evidence, which can be better adapted to the growth needs of the children, and not only improve the height of the children, but also improve the quality of life of the children. The purpose of this paper is to analyze the current status of the treatment of dwarfism through Chinese medicine, in order to provide theoretical help for the clinic.

## References

- [1] The Subspecialty Group of Endocrinologic, Hereditary and Metabolic Diseases, The Society of Pediatrics, Chinese Medical Association. Guidelines for diagnosis and treatment of children with short stature[J]. Chinese Journal of Pediatrics, 2008(6):428-430.
- [2] Hu Tianyi. Early detection and diagnosis of childhood dwarfism [J]. Journal Of Doctors Online, 2019, 9(2):33-33.
- [3] Li Lingyun, Zhao Linghui. Treatment of short stature in children with traditional Chinese and Western medicine[J]. Acta Medicinæ Sinica, 2020(4):194-197.
- [4] Liu Yingke, Zhang Zhixin, Wei Feiyue. "Dwarfism" Nomenclature Examination[J]. Chinese Medical Culture, 2012, 7(3):30-31.
- [5] Wang Pinshan. The basic theory of meridians in Chinese medicine's understanding of life[J]. Study Journal of Traditional Chinese Medicine, 2001, 19(2):100-101.
- [6] Qian Ting, Ye Jin. Overview of Chinese Medicine Treatment of Dwarfism[J]. Henan Traditional Chinese Medicine, 2014, 34(12):2502-2503.
- [7] Duan Juan. Thoughts on Chinese medicine clinical diagnosis and treatment of childhood dwarfism[J]. Sichuan Journal of Traditional Chinese Medicine, 2022, 40(10):34-37.
- [8] Zhang Yu, Ye Jin. Analysis of the idea of treating children with short stature from the spleen theory [J]. Jiangsu Journal of Traditional Chinese Medicine, 2018, 50(09):43-45.
- [9] Dai Xiaoyu, Zheng Hong. Application of Fuyang Theory in Short Stature Children[J]. Acta Chinese Medicine, 2021, 36(08):1636-1639.
- [10] Wang Qian, Zhang Wen, Liu Yan. Discussion on the Prevention and Treatment of Children with Short Stature from Shaoyang Based on the Theory of "Shaoyang Governing Bone" [J]. Journal of Zhejiang Chinese Medical University, 2021, 45(10):1057-1061.
- [11] Xiao Yao, Sun Liping. Overview of Traditional Chinese Medicine Treatment for Idiopathic Dwarfism[J]. Chinese Medicine Modern Distance Education of China, 2021, 19(13):204-206.
- [12] Zhu Qiaoning, Liang Yueping. Clinical Observation on Tonifying Spleen and Kidney Recipe in the Treatment of Idiopathic Short Stature of Deficiency of Spleen and Kidney Type[J]. Guangming Journal Of Chinese Medicine, 2023, 38(14):2734-2737.
- [13] Chen Kai, Qian Xiong, Ge Taotao. Zhang's clinical experience in treating idiopathic dwarfism in pediatrics[J]. Chinese rural medicine, 2022, 29(17):43-43.
- [14] Wu Licheng, Yang Tingting, Wang Qin. Clinical observation on 30 cases of idiopathic short stature with deficiency of both spleen and kidney syndrome treated by growth prescription combined with tuina[J]. Journal of Pediatrics of Traditional Chinese Medicine, 2021, 17(2):51-54.
- [15] Yang Bingbin, Wang Hongjuan, Guo Kai. Professor Xiao Heyin's experience in treating idiopathic short stature with Jian'er Zhuzhang Gao[J]. Journal of Pediatrics of Traditional Chinese Medicine, 2023, 19(1):29-31.
- [16] Bi Meifen, Zhang Xuefeng, Shen Libiao. Effects of acupuncture at the four suture points combined with the method of eliminating accumulation and regulating the spleen on insulin-like growth factor and height in 30 cases of children with dwarfism [J]. Journal of New Chinese Medicine, 2015, 47(2):183-185
- [17] Chen Wei, Xie Hua, Li Yonghua. Effect of acupoint catgut embedding on height of adolescents with spleen qi deficiency[J]. Chinese Acupuncture & Moxibustion, 2010, 30(2):110-112
- [18] Guo Yongcan, Lin Liping. Perceptions of an experimental case of bamboo-ring salt moxibustion in the treatment of dwarfism [J]. China's Naturopathy, 2020, 28(14):109-110
- [19] Xiang Hong, Sun Xiangjuan, Chang Ke, et al. Influence of Tiaoyun Shuniu massage and recombinant human growth hormone on growth and development of dwarf children[J]. Shaanxi Journal of Traditional Chinese Medicine, 2020, 41(6):766-769
- [20] Wu Liqin, Zhao Ming, Fu Lele, Xu Wenwei. Influences of Kaiwei Jianpi Patch on Growth of Idiopathic Short Stature Children and Serum IGFBP-3 and IGF-1[J]. Chinese Journal of Traditional Medical Science and Technology, 2021, 28(2):191-193.
- [21] Feng Bin, Ma Lixia, Mou Qinghui. A study of three traditional Chinese medicine treatments for children with



- idiopathic dwarfism [J].Inner Mongolia Journal of Traditional Chinese Medicine, 2014, 33(29):4-5.*
- [22] Zhang Hongyan. *Pediatric massage - "stepping stone" for children to grow taller[J].TCM Healthy Life-Nurturing, 2018, 4(3):40-41*
- [23] Huang Lijiao, Xiang Xiaoping, Huang Yuqin. *Application of five elements music therapy combined with acupressure in growth hormone stimulation test in children with dwarfism[J].Modern Practical Medicine, 2021, 33(11):1502-1503*
- [24] Chen Yafang, Peng Yu. *Chinese medicine care concepts for short-statured children[J].Clinical Journal Of Chinese Medicine, 2019, 11(24):14-15.*