

# *Treating Uremic Skin Itching from the Perspectives of Wind, Deficiency, Dampness, and Stasis*

Ying Zhang<sup>1</sup>, Yanyun Ren<sup>2,\*</sup>, Yixin Zhao<sup>1</sup>, Ruibing Shi<sup>1</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*

*\*Corresponding Author*

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**Abstract:** With the continuous development and application of kidney replacement therapy, the survival time of uremic patients is gradually extended. How to improve the quality of life of uremic patients has become a new clinical topic. As one of the complications of uremia, skin itching is gradually receiving attention. Although skin itching is a dermatology disease, it is common in patients with chronic kidney disease, especially those with uremia, and it is difficult to heal repeatedly. When the condition is serious, it even leads to anxiety and depression. However, the effect of western medicine on uremic skin itching is not ideal. In this situation, traditional Chinese medicine has significant advantages in treating uremic skin itching, such as effectiveness, safety, and economy. This article mainly discusses the pathogenesis of treating uremic skin itching in traditional Chinese medicine from the perspectives of wind, deficiency, dampness, and stasis.

## 1. Introduction

Uremic pruritus (UP), also known as renal pruritus, is a common damaging complication in patients with advanced or end-stage kidney disease. Chronic onset of UP can manifest as local or systemic discontinuous skin itching, desquamation, dryness, etc., with individual differences. Patients feel unbearable skin itching, which can also cause complications such as skin infections, insomnia, anxiety, and depression, seriously affecting their physical and mental health and quality of life.

Epidemiological data shows that 26.00% to 49.22% of uremic patients exhibit local or systemic moderate to severe itching, mostly occurring in the back (70%), lower limbs (67%), chest and abdomen (59%), upper limbs (28%), and head and neck (22%). During or after dialysis, patients have the most obvious itching symptoms, which are more severe at night and in winter, often lasting for months to years, and can change over time. Men are more prone to UP than women, The incidence of UP and itching intensity in peritoneal dialysis patients are higher than those in hemodialysis patients. Effectively alleviating the problem of uremic skin itching has profound implications for improving the quality of life of uremic patients.

Western medicine believes that the specific pathogenesis of UP is complex, mainly including skin dryness and dialysis, immune inflammation hypothesis, opioid hypothesis, elevated plasma histamine levels, parathyroid hormone mechanism, and other pathogenesis theories; Although there

are many options for Western medicine to treat UP, its clinical efficacy is not ideal. Currently, it is widely recognized that the method for treating UP is kidney transplantation. However, due to the scarcity of renal resources, high prices, and allograft rejection, most UP patients have not benefited from it. With the continuous practice and research in clinical practice, the understanding of the pathogenesis of uremic skin itching in traditional Chinese medicine has gradually matured, and it guides clinical treatment to achieve significant therapeutic effects, providing traditional Chinese medicine wisdom for the treatment of uremic skin itching.

## 2. Traditional Chinese Medicine Category of UP

There is no corresponding disease name for UP in traditional Chinese medicine literature. Based on the main manifestations of UP, which are discontinuous and varying degrees of skin itching, peeling, and dryness, it can be classified into the categories of “wind itching”, “itching wind”, “hidden rash”, “itching syndrome”, “wind syndrome”, “various itching”, and “yi feng itching” in traditional Chinese medicine; If the skin is scratched and blood stains are accumulated, it can be called “blood wind sores”.<sup>[1]</sup>

## 3. Explanation of Traditional Chinese Medicine Etiology and Pathogenesis

Summarizing the views of ancient and modern physicians, the location of UP is in the skin, and its onset is related to the spleen, kidneys, heart, and lungs; The pathogenesis of UP is always based on the deficiency of the spleen, kidney, and blood. The deficiency of the spleen is mainly characterized by wind, (heat) dampness (turbid toxin), and blood stasis. “Treating both the root and root causes, and harmonizing the organs” have become the foothold for the treatment of this disease. In addition, the causes of itching in UP mainly include four points: “wind, deficiency, dampness, and blood stasis”. Therefore, uremic skin itching is mainly treated from the perspective of “wind, deficiency, dampness, and blood stasis”.

### 3.1 Treating UP from the Perspective of Wind

Most doctors believe that the pathogenic factors of UP are related to wind, including external wind and internal wind. External wind refers to external wind evil (often combined with heat toxicity). Patients with uremia are prone to external infection due to physical deficiency. Wind evil invades the skin's striae, competing with the normal qi. When the evil is severe, it attacks and causes pain. When the evil is mild, it follows the camp and invades the skin, causing a disharmony of qi and blood between the skin and flesh, causing itching and unbearable itching. As stated in the “Treatise on the Origins of Various Diseases”, “Wind itching is caused by physical deficiency. Wind causes striae, competing with the blood qi, and both come and go between the skin. The number of evil qi cannot impact pain, so itching is also present. Internal wind mainly refers to the generation of wind due to blood deficiency. UP patients suffer from spleen and kidney deficiency, prolonged illness leading to depletion of essence and blood. Blood deficiency and dry heat can lead to wind, which can cause damage to the skin surface and further damage the essence and blood. If the skin loses nourishment and there is a disharmony between qi and blood between the skin and flesh, it can lead to itching. As pointed out in the “Surgical Syndrome and Treatment Complete Book”, “itching wind, itching all over the body, without sores or scabs, can cause persistent itching, and liver and family blood deficiency can lead to dry heat and wind”. Blood deficiency generates wind to a certain extent, which can also reflect the idea of “various itchings are deficiency” in the *Neijing*. This disease is located on the skin. If we focus on the mechanism of transforming dryness and generating wind in the skin area, it can be caused by weak qi and blood circulation, which cannot

moisten the skin, or by the accumulation of evil energy in the skin and blockage of the meridians over time.

The book “Su Wen · Gu Kong Lun” states that “wind is the beginning of all diseases”. Wind is the main qi in spring, and can be seen in the four seasons. Wind evil is good and can change several times, and also invade the skin. It is one of the most common causes of skin itching. Therefore, when treating uremic skin itching, it is necessary to combine the use of wind dispelling drugs to dispel internal and external evil winds, and restore qi and blood to peace, in order to effectively relieve itching. In addition, wind is a yang pathogenic factor that can easily damage the body and consume fluids. If the skin is affected by itching, it can lead to loss of moisture and dryness. Therefore, it is important to pay attention to keeping the skin moist in the itchy areas.

### 3.2 Treating Up from Deficiency

The Internal Classic states: “All pains are solid, and all itching is empty. The book “Questions about Various Diseases and Distinguishing Doubts” also points out that “the body is empty and itchy, and blood is not proud of the striae. The spleen and kidney are the foundation of the first and second nature, respectively. Spleen and kidney deficiency and failure, and insufficient qi and blood transformation lead to severe blood deficiency. Firstly, blood deficiency can transform dryness into wind and internal movement, causing a disharmony of qi and blood between the skin and flesh, resulting in itching. Internal dryness can further exacerbate blood deficiency by consuming yin fluid, and skin loss of nourishment can cause itching even more severe; Secondly, prolonged blood deficiency and lack of nourishment on the skin can lead to itching. Dynasty and others believed that the majority of maintenance dialysis patients have complications such as renal anemia, manifested as dizziness, pale complexion, fatigue, palpitations, insomnia, pale tongue, weak pulse, and other blood deficiency syndromes. Over time, blood deficiency leads to weathering and dryness, manifested as dry skin, dry taste and tongue, and itching of the skin. <sup>[2]</sup> Overall, treating UP from the perspective of deficiency includes the mechanism of blood deficiency generating “wind”. Deficiency is both the cause and the development result of the disease, leading to a vicious cycle and worsening itching that is difficult to cure. Deficiency can run through the development of this disease. Therefore, when treating uremic skin itching, it is important to recognize this and appropriately supplement deficiency to correct qi, blood, yin, yang, and visceral functions, striving to achieve the ultimate goal in treating the disease.

### 3.3 Treating UP from the Perspective of Dampness

Patients with uremia often suffer from spleen and kidney deficiency as the root cause, and the spleen is the acquired root cause. It is mainly responsible for circulation and transformation. When the spleen is deficient, water consumption and transformation are unfavorable, which can cause dampness. If dampness overflows on the skin, it can cause itching and unbearable skin; Kidney is the foundation of congenital diseases, with the function of regulating the opening and closing of the spleen and kidney. If the spleen and kidney fail, the spleen loses its healthy circulation. If the kidney fails to open and close, the dampness and evil block the triple energizer. The triple energizer is mainly responsible for the circulation of water and fluid and the passage of vital energy. If the triple energizer blocks, the clear yang does not rise, the turbid yin does not fall, and the dampness and evil turn into turbid. Moreover, as the disease progresses, the dampness and turbidity block can transform into dampness. Therefore, dampness and pathogenic factors can coexist with turbidity and toxicity as the condition progresses, leading to repeated itching and difficulty in healing. During treatment, the treatment of dispelling dampness, purgation, turbidity, and detoxification should be given according to the patient's condition.

There is a research report <sup>[3]</sup> that using traditional Chinese medicine fumigation such as Fructus Cnidii, Sophora flavescens, Wild Chrysanthemum, and Cortex Phellodendri to treat uremic skin itching patients can improve the level of micro inflammation in the body of hemodialysis patients, lower the levels of creatinine, blood phosphorus, blood calcium, PTH, and histamine, thereby alleviating skin itching.

### 3.4 Treating UP from the Perspective of Blood Stasis

Patients with uremic skin itching experience prolonged illness leading to blood stasis. The patient's spleen deficiency generates dampness, which is a yin evil and can easily suppress the qi mechanism. Long term treatment can transform heat, further reducing dryness and damaging yin, and boiling blood to form blood stasis. Therefore, as the condition progresses, the phenomenon of blood stasis and obstruction gradually emerges, as pointed out in “The Correction of Medical Errors”: “Blood that is heated is boiled into lumps. Obstruction of blood stasis affects the circulation of qi and blood, resulting in unfavorable qi and blood flow between the skin. Skin loss of nourishment and blood stasis can lead to itching and nail errors.

Blood stasis is increasingly valued by traditional Chinese medicine in the pathogenesis of chronic kidney failure. Western medicine has also observed clinically that uremic patients have hemorheology changes and hypercoagulability tendency <sup>[4]</sup>. Therefore, when treating uremic skin itching, it is also necessary to pay attention to whether the patient has the pathogenesis of blood stasis. Professor Zhao Bingnan <sup>[5]</sup> summarized previous experience and advocated the use of both promoting blood circulation and unblocking collaterals while dispelling wind, and combined strengthening the body with dispelling pathogenic factors. In skin pruritus with complex pathological changes, drugs are commonly used in clinical practice to regulate yin and yang.

In addition, “insomnia and excessive dreaming are blood stasis”. Patients with uremic skin itching often have insomnia, which can be caused by blood stasis. Prolonged insomnia can also exacerbate blood stasis, causing itching to be difficult to encounter, and the two interact with each other, gradually falling into a vicious cycle.

### 3.5 Other Theories of Traditional Chinese Medicine

Firstly, traditional Chinese medicine believes that UP is related to the heart (mind). The heart governs the mind, and uremic skin itching is related to the heart, especially the mind. According to Article 19 of “Su Wen Zhi Zhen Yao Da Lun”, “All pain, itching, and sores belong to the heart”, which points out the special relationship between many pain, itching, sores, and the heart. There are two interpretations of this. Firstly, the heart is in charge of fire and heat. “If the heat is severe, the sores will ache, and if the heat is mild, the sores will itch; Secondly, the heart harbors the mind, and all pain and itching sores belong to the heart because the heart governs the mind, and the heart harbors the mind. These symptoms of pain and itching are all within the heart's ability to feel. Therefore, for patients with uremic skin itching, it is particularly important to calm their minds, improve their emotions, alleviate their anxiety, maintain peace of mind, and balance their governance.

In addition, traditional Chinese medicine believes that the occurrence of UP is also related to the pathogenesis of “lung-soul-skin” disease. The lungs dominate the skin, and uremic skin itching is located on the skin, which is closely related to the lungs. In the book “Su Wen · Liu Jie Zang Xiang Lun”, it is said: “The lung is the foundation of qi, and the soul is also located; its beauty lies in the hair, and it is filled in the skin.” The lung stores the soul, which is an innate and instinctive sensation and action, such as non conditioned reflexes such as sucking and blinking. The Classic of Classics - Zangxiang Classics states: “The soul is for use, capable of movement, and can be felt for

pain and itching.” Therefore, the soul can belong to a part of the generalized spirit of the human body, similar to the previous understanding of “all pain and itching ulcers belong to the heart”. Therefore, the sensation of skin itching is related to the soul and lungs, which is the mechanism of “lung soul skin” causing itching. The lungs are the source of water above, and belong to the category of gold. They are interdependent with the kidneys, mother and child, and the yin fluid is mutually beneficial, which is known as the “golden water phase”; Kidney yin is also the fundamental source of yin fluid throughout the body. Patients with uremia suffer from spleen and kidney deficiency, dark depletion of yin fluid, and insufficient kidney yin to nourish lung yin, resulting in deficiency of both lung qi and yin. The lungs control the skin and fur, which is the external defense of the body and relies on the qi of the lung to warm and nourish. If the lung qi and yin are insufficient, the skin and fur lack moisture and luster, and the disharmony of qi and blood between the skin and flesh leads to itching. Moreover, due to the deficiency of vital energy and yin, the skin and fur are not effective in protecting the external environment, and pathogens are prone to invasion. In clinical practice, patients with chronic kidney disease are highly susceptible to external infections due to the deficiency of vital energy, which is also related to the deficiency of vital energy in the lungs.

Therefore, in the treatment of uremic skin itching, attention should be paid to combining the “lung soul skin” theory, which can appropriately benefit the lungs, and can also use plant or animal skin medication to achieve the effect of treating skin with skin. <sup>[1]</sup>

#### 4. Conclusion

Research shows that half of dialysis patients and a quarter of non dialysis chronic kidney disease patients are troubled by itching <sup>[6]</sup>. The incidence rate of UP has made it a clinical problem that needs to be solved urgently. In clinical practice, the pathogenesis of uremic skin itching in patients is complex and variable, with both deficiency and excess of pathogenic factors running through the entire process. The common pathogenic factors of UP include wind, deficiency, dampness, and blood stasis, with wind evil and positive deficiency being the most common, while dampness evil can be accompanied by turbidity and toxicity. The main pathogenesis of this disease is blood deficiency and wind dryness, skin loss of nourishment, and disharmony of qi and blood between the skin and flesh, which are the mechanisms of itching. Patients often suffer from spleen and kidney deficiency, which leads to prolonged illness, blood deficiency, dryness, wind generation, dampness, heat, turbidity, toxin, and stasis accumulation. This further exacerbates the depletion of fluid and blood, leading to a vicious cycle where the skin is not prosperous and the qi and blood cannot be reconciled, ultimately leading to itching and repeated difficulty in healing. Therefore, on the basis of accurate dialectics, uremic skin pruritus should be treated from wind, deficiency, dampness and blood stasis. In addition, attention should be paid to the relationship between uremic skin pruritus and heart and lung. Therefore, in the treatment of middle note patients' emotions, it should not be ignored to benefit the heart and lung.

#### References

- [1] Xu Chuanlan, Ming Yao, Zhao Sha, et al. “Exploring the Traditional Chinese Medicine Treatment of Uremic Skin Itching Based on the Theory of Huangdi Neijing”. *Chinese Medical Forum*, vol.34, no.03, pp. 11-12, 2019.
- [2] Dynasty, Jiang Lili, Shi Lili. “Observation on the Therapeutic Effect of Siwu Jiefeng Dihuang Tang on Hemodialysis Skin Itching”. *Sichuan Traditional Chinese Medicine*, vol.32, no.11, pp.114-116, 2014.
- [3] Liu Lifang. “Observation on the Therapeutic Effect of Traditional Chinese Medicine Comprehensive Nursing on Skin Itching in Uremic Dialysis Patients”. *Journal of External Treatment of Traditional Chinese Medicine*, vol.28, no.05, pp.54-55, 2019.
- [4] Wang Haiye, Peng Weihua. “Preliminary Exploration of Traditional Chinese Medicine Syndrome Types and Related

*Influencing Factors in Patients with Skin Itching During Maintenance Hemodialysis*". *Chinese Journal of Integrated Traditional Chinese and Western Medicine Nephropathy*, vol.20, no.09, pp.808-811, 2019.

[5] Qu Xianhou, Li Guanglu. "Analysis of Zhao Bingnan's Selection of Prescriptions for Treating Skin Pruritus". *Shandong Journal of Traditional Chinese Medicine*, vol.37, no.10, pp. 838-839, 2018.

[6] Aaron J Trachtenberg, David Collister, Claudio Rigatto, et al. "Recent Advances in the Treatment of Uremic Pruritus". *Curr Opin Nephrol Hypertens*, vol.29, no.05, pp.465-470, 2020.