

Understanding the Use of Radix Astragali Seu Hedysari in the Treatment of Edema Due to Renal Diseases

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Abstract: Radix Astragali seu Hedysari is warm in nature and slightly sweet in taste. It belongs to the lung, spleen, and kidney meridians. It passes through a waterway, dredges the triple energizer, and has a significant effect on edema due to renal diseases. Ancient doctors believed that Radix Astragali seu Hedysari is excellent in tonifying the middle, supplementing Qi, and dredging through the triple energizer. In modern times, many doctors have found that whether it is used as a single drug or in combination with other drugs, it is widely used in clinical practice and has a good effect in inducing diuresis.

Keywords: Radix Astragali seu Hedysari; Edema due to renal diseases; Induce diuresis

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1. Understanding the use of Radix Astragali seu Hedysari

1.1. Before Yuan Dynasty

Radix Astragali seu Hedysari was first seen in Shen Nong's Herbal Classic. Hongjing Tao mentioned that Radix Astragali seu Hedysari is able to replenish deficiency, improve fatigue, and marked emaciation ^[1]. Gao Li believes that it does not only replenish vitality, but also dredge and replenish the triple energizer ^[2].

1.2. Ming and Qing Dynasties

The book, *Evidence of the Sutra*, records that Radix Astragali seu Hedysari has one source, three parties, dredges the root of the triple energizer, and benefits the Qi of construction as well as defense ^[3]. Yitian Lu believes that it "strengthens the surface and opens the tunnel ^[4]." It does not only strengthen the surface and prevent sweating, but also facilitate the triple energizer and eliminate edema. Bingcheng Zhang mentioned that Radix Astragali seu Hedysari is a "holy" medicine for surgery, which can protect Qi and blood without causing blood stasis ^[5].

1.3. Modern times

Yuemei Zhong believes that Radix Astragali seu Hedysari is an excellent treatment in geomancy in addition to its function to expel the retention of water from skin ^[6]. Xichun Zhang mentioned that Radix Astragali seu Hedysari is not only beneficial in treating the depression of pectoral Qi in the chest, but also facilitates urination to reduce swelling and warm cold drinks to disperse knots in the chest ^[7]. Fuzhou Pu ^[8] claimed that it is useful in tonifying Qi, strengthening muscles, and clearing virtual heat. According to the *Chinese Pharmacopoeia*, Radix Astragali seu Hedysari has the functions of tonifying Qi and Yang, inducing diuresis

while dispersing swelling, consolidating surface to prevent sweating, as well as treating edema caused by Qi deficiency ^[9].

2. Understanding of edema due to renal diseases

The description of edema due to renal diseases has been recorded in *Magic Pivot: Water Distension*. This disease is due to the dysfunction of water metabolism at multiple viscera, involving the lung, spleen, and kidneys. *Jing Yue's Complete Work: Swelling* pointed out that the pathogenesis of edema involves the imbalance among three organs – kidneys, spleen, and lung, where the kidney is the standard of the lung while the spleen is the main channel. All three are in synergy and have mutual restrictions. The balance among the three organs ensures the unobstructed flow of water. A slight imbalance would lead to the retention of fluids. *Great Treatise on the Essentials of Supreme Truth* mentioned that the main cause of edema is still due to the kidneys.

For the treatment of edema due to renal diseases, *Plain Questions: Tang Ye Lao Li Lun* commended the principle of “opening the sweat pores, cleaning them, and removing bad elements that have been accumulated in the body.” According to the characteristics of different types of edemas, Zhongjing Zhang have suggested that the principle of treatment for those with edema below the waist should be about inducing uresis and promoting sweating.

3. Clinical application

As early as the Eastern Han Dynasty, it has been recorded in the *Ancient Book* that tetrandra and astragalus decoction was used to treat edema and the dosage of Radix Astragali seu Hedysari weighed 3 liang. During the Qing Dynasty, Yitian Lu also recorded several medical cases in *Medical Talk in Cold Room*, where Radix Astragali seu Hedysari was used to treat edema ^[10]. During the period of the Republic of China, Hu Shi suffered from diabetes and chronic nephritis, complicated with heart disease as well as edema all over his body. In view of that, Zhongan Lu, a famous traditional Chinese medicine doctor in Beijing, used Radix Astragali seu Hedysari to treat Hu Shi, resulting in a remarkable curative effect ^[11]. In modern times, Fan Wenhui commends the practice of using 120 g decoction of raw Radix Astragali seu Hedysari and boiling and making glutinous rice into porridge to treat postpartum edema ^[12].

Jie Ma ^[13] found that the use of tetrandra and astragalus decoction and Radix Astragali seu Hedysari (80 g) can significantly reduce edema and the risk of further damage to the renal function. Wenli Li ^[14] suggested using 50 g of Radix Astragali seu Hedysari, which does not only significantly reduce edema, but also urinary protein excretion. In a study, Rong Lu and other researchers used astragalus injection combined with low molecular weight heparin calcium to treat edema due to renal diseases. The results showed that the total effective rate of the treatment group was 91.7%, which was significantly higher than that of the control group (73.2%) ^[15]. In another study, Jingtao Nie discussed the curative effect of tetrandra and astragalus decoction on primary nephrotic syndrome in the edema stage. The results showed that the effective rate of the treatment group was 90%, which was significantly higher than that of the control group (80%) ^[16]. Jie Lin ^[17] observed 60 patients with primary nephrotic syndrome in the edema stage. The control group was treated with conventional Western medicine whereas the study group was treated with tetrandra and astragalus decoction on the basis of the control group. The results showed that the total effective rate of the study group was 96.7%, which was significantly better than that of the control group (73.3%).

4. Conclusion

Modern clinical studies have shown that Radix Astragali seu Hedysari has pharmacological effects of immunity enhancement, diuresis, as well as liver, heart, brain, and kidney protection. With continuous

research on the efficacy and chemical components of Radix Astragali seu Hedysari, it will eventually be widely used in clinical practice to better serve human health.

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Disclosure statement

The authors declare that there is no conflict of interest.

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