

Huang Qi (Radix Astragali)

黄耆 黄芪

Pinyin Name: *Huang Qi*

Alternate Chinese Names: *Jin Huang Qi*, *Jian Qi*, *Kou Qi*

Original Source: *Shen Nong Ben Cao Jing* (Divine Husbandman's Classic of the Materia Medica) in the second century

English Name: astragalus, Mongolian milkvetch root, membranous milkvetch root

Botanical Name: *Astragalus membranaceus* Bge. var. *mongholicus* (Dge.) Hsiao (*Meng Gu Huang Qi*); *Astragalus membranaceus* (Fisch.) Bge. (*Mo Jiao Huang Qi*)

Pharmaceutical Name: Radix Astragali

Properties: sweet, slightly warm

Channels Entered: Spleen, Lung



CHINESE THERAPEUTIC ACTIONS

1. Tonifies Qi and Raises Yang

Spleen qi deficiency: *Huang Qi* (Radix Astragali) tonifies the Spleen to enhance its effectiveness in transformation and transportation. Clinical applications include pale or sallow facial appearance, fatigue, tired extremities, decreased food intake, diarrhea, and other conditions of Spleen deficiency.

- Fatigue and tired extremities due to Spleen deficiency: use *Huang Qi* individually, or combine it with *Dang Shen* (Radix Codonopsis) or *Ren Shen* (Radix Ginseng) for synergistic effect.
- Loose stools or diarrhea due to Spleen deficiency: add it to *Fu Ling* (Poria), *Shan Yao* (Rhizoma Dioscoreae), *Bian Dou* (Semen Lablab Album) and *Yi Yi Ren* (Semen Coicis).
- Spleen yang deficiency: use *Huang Qi* with yang tonics.

Inability of qi to control blood circulation: Proper flow and production of blood require an adequate supply of qi. In addition, Spleen qi controls the flow of blood and keeps it in the vessels. Deficiency of Spleen qi may lead to secondary blood deficiency and leakage of blood. Clinically, patients may exhibit fatigue, lethargy, shortness of breath, pale face, hematemesis, hemochezia, bruises, uterine bleeding, or other bleeding disorders. In short, patients with Spleen qi deficiency may bleed or bruise easily.

- Qi and blood deficiencies characterized by shortness of breath and pale face: combine *Huang Qi* with *Ren Shen* (Radix Ginseng), *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), *Dang Gui* (Radix Angelicae Sinensis) and *Suan Zao Ren* (Semen Zizyphi Spinosae). **Exemplar Formula:** *Gui Pi Tang* (Restore the Spleen Decoction).

- Hematemesis, hemochezia, and profuse menstrual bleeding caused by leakage of blood: use this herb with *Jing Jie* (Herba Schizonepetae), *Guan Zhong* (Rhizoma Dryopteridis), *San Qi* (Radix Notoginseng), *Hai Piao Xiao* (Endoconcha Sepiae) and *E Jiao* (Colla Corii Asini) in addition to *Gui Pi Tang* (Restore the Spleen Decoction).

Prolapse of organs: *Zhong* (central) qi deficiency results in prolapse of internal organs. *Huang Qi* tonifies qi and raises yang to treat prolapse of the stomach, rectum or other organs caused by the inability of qi and yang to hold the organs in the proper place.

- Prolapse of internal organs: use *Huang Qi* with *Ren Shen* (Radix Ginseng), *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), *Chai Hu* (Radix Bupleuri), and *Sheng Ma* (Rhizoma Cimicifugae). **Exemplar Formula:** *Bu Zhong Yi Qi Tang* (Tonify the Middle and Augment the Qi Decoction). A large amount of *Zhi Ke* (Fructus Aurantii) may be added to enhance the overall effectiveness of the formula.

Lung and Spleen qi deficiencies: Clinical manifestations of compromised respiratory and digestive functions include cough, wheezing, shortness of breath, profuse white and watery sputum, pale face, low voice, fatigue, abdominal fullness and diarrhea. *Huang Qi* enters both Lung and Spleen channels to tonify qi. It is the herb of choice for treating qi deficiency of these organs.

- Lung and Spleen qi deficiencies: combine *Huang Qi* with *Dang Shen* (Radix Codonopsis), *Fu Ling* (Poria), *Zi Wan* (Radix Asteris), and *Chen Pi* (Pericarpium Citri Reticulatae).

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Qi and blood deficiencies: This imbalance is characterized by sallow facial appearance, dizziness, vertigo, lack of energy, no desire to speak, spontaneous perspiration, palpitations and insomnia. Since qi is the leader of blood, tonification of qi enhances the production of blood.

- Qi and blood deficiencies: pair *Huang Qi* with *Dang Gui* (Radicis Angelicae Sinensis). **Exemplar Formula:** *Dang Gui Bu Xue Tang* (Tangkuei Decoction to Tonify the Blood).

Qi deficiency with deficiency heat symptoms: Spleen qi deficiency prohibits clear yang from disseminating throughout the body. If yang qi is trapped in the muscle level for a prolonged period of time, symptoms of irritability with low-grade fever or unremitting high fever with fatigue, spontaneous sweating and frequent contraction of exterior conditions will occur. *Huang Qi* treats this deficiency heat condition even though it is warm in nature. **Exemplar Formula:** *Bu Zhong Yi Qi Tang* (Tonify the Middle and Augment the Qi Decoction).

Cancer with qi deficiency caused by chemotherapy and radiation treatments: Patients with cancer often receive chemotherapy and radiation treatments that severely damage qi. Use of *Huang Qi* replenishes the qi and decreases the adverse side effects associated with such treatments.

- Qi deficiency due to chemotherapy and radiation: use *Huang Qi* with *Ling Zhi* (Ganoderma), *Nu Zhen Zi* (Fructus Ligustri Lucidi), *Dang Shen* (Radix Codonopsis), *Ren Shen* (Radix Ginseng), *Dong Chong Xia Cao* (Cordyceps) and *Shan Zhu Yu* (Fructus Corni).

Sudden qi collapse due to heavy blood loss: Qi and blood travel together in the vessels. When there is a sudden loss of blood, qi collapses as well. Symptoms include sudden facial pallor, profuse sweating, shortness of breath, and fading pulse. In severe cases, symptoms such as icy extremities, a sudden drop in blood pressure and body temperature, and sweating, may occur.

- Qi and blood collapse: use a large dose of *Huang Qi* (between 60 to 120 grams) with *Dang Gui* (Radicis Angelicae Sinensis), *Ren Shen* (Radix Ginseng), *Fu Zi* (Radix Aconiti Lateralis Praeparata), *Mai Men Dong* (Radix Ophiopogonis), and *Wu Wei Zi* (Fructus Schisandrae Chinensis).

2. Tonifies Wei (Defensive) Qi, Consolidates the Exterior

Deficiency of the wei (defensive) qi with spontaneous sweating: Deficiency of the exterior leads to leakage of body fluids, resulting in spontaneous perspiration. This often leads to a compromised immune system and frequent contraction of exterior pathogenic infections.

- Spontaneous perspiration because of exterior deficiency: use *Huang Qi* with *Mu Li* (Concha Ostreae), *Ma Huang Gen* (Radix Ephedrae), and *Fu Xiao Mai* (Semen Triticum Aestivum).
- Spontaneous perspiration with aversion to wind, weak pulse, and frequent contraction of bacterial and viral infections: use this herb with *Bai Zhu* (Rhizoma Atractylodis Macrocephalae) and *Fang Feng* (Radix Saposhnikoviae). **Exemplar Formula:** *Yu Ping Feng San* (Jade Windscreen Powder).
- Profuse perspiration and extreme fatigue due to yang deficiency: combine *Huang Qi* with *Fu Zi* (Radix Aconiti Lateralis Praeparata) and *Sheng Jiang* (Rhizoma Zingiberis Recens).
- Night sweating due to qi and yin deficiencies: use it with *Sheng Di Huang* (Radix Rehmanniae), *Mai Men Dong* (Radix Ophiopogonis), *Wu Wei Zi* (Fructus Schisandrae Chinensis), *Fu Xiao Mai* (Semen Triticum Aestivum) and *Di Gu Pi* (Cortex Lycii).

3. Promotes the Discharge of Pus and Generates Flesh

Chronic non-healing ulcers and sores: *Huang Qi* treats chronic sores and ulcerations with underlying deficiencies of qi and blood. Use of *Huang Qi* facilitates the discharge of pus and abscess, and encourages healing through generation of new flesh.

- Chronic non-ulcerating sores with pus: combine *Huang Qi* with *Dang Gui* (Radicis Angelicae Sinensis), *Chuan Xiong* (Rhizoma Ligustici Chuanxiong), *Chuan Shan Jia* (Squama Manis), and *Zao Jiao Ci* (Spina Gleditsiae).
- Chronic sores with underlying deficiency: use this herb with *Ren Shen* (Radix Ginseng), *Dang Gui* (Radicis Angelicae Sinensis), *Chuan Xiong* (Rhizoma Ligustici Chuanxiong), *Bai Zhi* (Radix Angelicae Dahuricae) and *Fang Feng* (Radix Saposhnikoviae). **Exemplar Formula:** *Qian Jin Nei Tuo San* (Drain the Interior Powder Worthy of A Thousand Gold).
- Flat, chronic sores and non-healing ulcers: use it with *Dang Gui* (Radicis Angelicae Sinensis), *Shu Di Huang* (Radix Rehmanniae Preparata), *Ren Shen* (Radix Ginseng), *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), and *Rou Gui* (Cortex Cinnamomi). **Exemplar Formula:** *Shi Quan Da Bu Tang* (All-Inclusive Great Tonifying Decoction).
- Qi deficiency lesions in children: add *Huang Qi* to *Ren Shen* (Radix Ginseng), *Rou Gui* (Cortex Cinnamomi), and *Zhi Gan Cao* (Radix Glycyrrhizae Preparata). **Exemplar Formula:** *Bao Yuan Tang* (Preserve the Basal Decoction).

4. Regulates Water Circulation, Reduces Edema

Edema due to qi deficiency: Spleen qi deficiency with an

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inability to carry out the transportation function results in retention of water in the body. *Huang Qi* tonifies qi and promotes normal circulation of water to treat conditions such as facial edema, superficial edema, sensations of heaviness in the body, spontaneous sweating and intolerance of wind. *Huang Qi* tonifies qi, and in turn facilitates the elimination of water. When used individually, the diuretic effect of *Huang Qi* is very mild and should be combined with diuretic herbs for stronger therapeutic results. However, this is the herb of choice when the patient presents deficiency along with water retention signs and symptoms. When using *Huang Qi* as a diuretic only, the recommended dosage is low, approximately 9 grams.

- Edema, heavy sensations of the body, spontaneous perspiration, and aversion to wind because of accumulation of water with an exterior wind condition: use *Huang Qi* with *Bai Zhu* (Rhizoma Atractylodis Macrocephalae), *Fen Fang Ji* (Radix Stephaniae Tetandreae), *Gan Cao* (Radix Glycyrrhizae) and *Sheng Jiang* (Rhizoma Zingiberis Recens). **Exemplar Formula:** *Fang Ji Huang Qi Tang* (Stephania and Astragalus Decoction).
- Superficial edema caused by yang deficiency: combine this herb with *Gui Zhi* (Ramulus Cinnamomi), *Fu Ling* (Poria) and *Fen Fang Ji* (Radix Stephaniae Tetandreae). **Exemplar Formula:** *Fang Ji Fu Ling Tang* (Stephania and Poria Decoction).
- Chronic nephritis with edema and proteinuria: use a high dose of *Huang Qi* (60 to 90 grams) with *Dang Shen* (Radix Codonopsis), *Shi Wei* (Folium Pyrrosiae), and *Shan Yao* (Rhizoma Dioscoreae) with *Fang Ji Huang Qi Tang* (Stephania and Astragalus Decoction) or *Fang Ji Fu Ling Tang* (Stephania and Poria Decoction).

5. Relieves Numbness and Pain

Numbness: Numbness of the muscles in this case is due to insufficient nourishment and circulation of qi and blood. *Huang Qi* has a strong effect to tonify qi, which, in turn, helps to generate blood and increase blood flow to the extremities. It tonifies and promotes normal circulation of qi to relieve skin and muscle numbness and pain.

- Skin and muscle numbness and pain caused by qi and blood deficiencies: use this herb with *Gui Zhi* (Ramulus Cinnamomi), *Bai Shao* (Radix Paeoniae Alba), *Sheng Jiang* (Rhizoma Zingiberis Recens) and *Da Zao* (Fructus Jujubae).
- Numbness and pain in the extremities due to deficiency at *ying* (nutritive) and *wei* (defense) levels and accumulation of wind and dampness: use *Huang Qi* with *Qiang Huo* (Rhizoma et Radix Notopterygii), *Fang Feng* (Radix Saposhnikoviae), *Jiang Huang* (Rhizoma Curcumae Longae), and *Dang Gui* (Radix Angelicae Sinensis).

Exemplar Formula: *Juan Bi Tang* (Remove Painful Obstruction Decoctions).

Stroke Sequelae: *Huang Qi* is commonly used to treat post-stroke complications, such as hemiplegia and deviation of the eyes and mouth, caused by qi deficiency and blood stagnation. It is important to note that *Huang Qi* is only suitable for post-stroke patients who are deficient in nature and the dosage used must be high. Use of *Huang Qi* is not recommended for those who are at risk of stroke due to Liver yang rising, such as in patients with hypertension.

- Post-stroke complications: use a high dose of *Huang Qi* with *Dang Gui Wei* (Extremitas Radicis Angelicae Sinensis), *Chuan Xiong* (Rhizoma Ligustici Chuanxiong), *Tao Ren* (Semen Persicae), *Hong Hua* (Flos Carthami) and *Di Long* (Pheretima). **Exemplar Formula:** *Bu Yang Huan Wu Tang* (Tonify the Yang to Restore Five Decoction).

6. Treats Xiao Ke (Wasting and Thirsting) Syndrome

Xiao ke syndrome: *Huang Qi* tonifies qi, promotes generation of body fluids, and treats *xiao ke* syndrome accompanied by symptoms of thirst and fatigue.

- *Xiao ke* syndrome without interior heat: use *Huang Qi* with *Sheng Di Huang* (Radix Rehmanniae), *Shan Zhu Yu* (Fructus Corni), *Shan Yao* (Rhizoma Dioscoreae) and pig pancreas.
- *Xiao ke* syndrome with interior heat: combine this herb with *Zhi Mu* (Radix Anemarrhenae), *Ge Gen* (Radix Puerariae), *Tian Hua Fen* (Radix Trichosanthis) and *Shan Yao* (Rhizoma Dioscoreae).

DOSAGE

10 to 15 grams. The maximum dosage of *Huang Qi* is 120 grams. Unprocessed *Huang Qi* (fresh or dried) has qualities better suited to treat exterior disorders, as it tonifies *wei* (defensive) *qi*, stops perspiration, regulates circulation of water, reduces edema, and promotes generation of flesh. The honey-processed herb has an enhanced ability to treat imbalances of the interior, such as Spleen and Lung qi deficiencies and yang deficiency. It is also commonly used to treat chronic cases of fatigue, diarrhea, organ prolapse, and all cases of deficiency.

When preparing honey-fried *Huang Qi*, use 12.5 to 15 kg of honey with 50 kg of the dried herb. Mix and stir fry over low heat until the herb turns brown and is no longer sticky to the touch. [The amounts of honey and *Huang Qi* can be increased or decreased as long as they stay in the same proportion.]

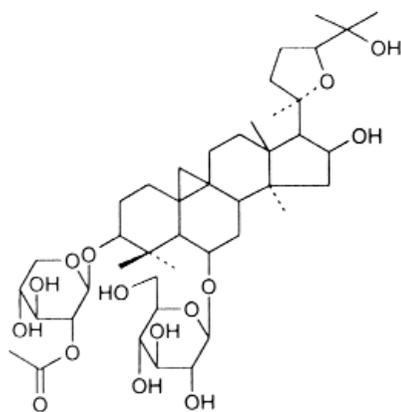
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CAUTIONS / CONTRAINDICATIONS

- Use of *Huang Qi* is contraindicated when pathogens are present at exterior levels of the body.
- It is contraindicated in cases characterized by an excess of qi, such as found in anger due to Liver qi stagnation.
- It is contraindicated in internal heat, excess fire, or deficiency and cold of the lower *jiao*.
- It is contraindicated with sores and lesions caused by heat in the blood.
- It is contraindicated in cases of stagnation.
- Pregnant women in the third trimester should use *Huang Qi* with caution. It has a diuretic effect and long-term use may decrease the quantity of amniotic fluid.¹

CHEMICAL COMPOSITION

Acetylastragaloside I, astragaloside I-IV, isoastragaloside I-II, astramembrannin II, cycloastragenol, cyclosiversigenin, soyasaponin I, tragacantha, kumatakenin, fomononetin.^{2,3}



Astragaloside I

PHARMACOLOGICAL EFFECTS

- **Immunostimulant:** Subcutaneous injection of *Huang Qi* increases white blood cells and multinuclear leukocytes in mice. In addition, administration of *Huang Qi* is associated with an enhanced production of IgM in mice.^{4,5}
- **Hematopoietic:** *Huang Qi* has been shown to increase the production and maturity of blood cells from the bone marrow.⁶
- **Metabolic:** Decoction of *Huang Qi* has been shown to increase the basal metabolic rate and cAMP in mice.⁷
- **Effect on cAMP and cGMP:** Decoction of *Huang Qi* is associated with increased cAMP but decreased cGMP in plasma, increased cAMP and cGMP in the spleen, and increased cGMP in the liver.⁸
- **Renal:** Oral use of *Huang Qi* powder decreases the amount of protein present in the urine of mice.⁹
- **Antihypertensive:** Intravenous injection of *Huang Qi* decreases blood pressure in anesthetized rabbits, dogs

and cats. The mechanism of this effect is attributed to dilation of peripheral blood vessels.¹⁰

- **Hepatoprotective:** *Huang Qi* is commonly used to treat various types of chronic hepatitis. Furthermore, *Huang Qi* has significant hepatoprotective effects, especially against carbon tetrachloride.^{11,12}
- **Antibiotic:** *Huang Qi* has been shown to inhibit the activity of *Bacillus dysenteriae*, *Bacillus anthracis*, β -hemolytic streptococcus, *Corynebacterium diphtheriae*, *Diplococcus pneumoniae*, and *Staphylococcus aureus*.¹³
- **Sedative and analgesic:** Intravenous injection of astragaloside has been shown to have mild sedative and analgesic effects in mice.¹⁴

CLINICAL STUDIES AND RESEARCH

- **Prevention of common colds and influenza:** In one study, 540 patients with past histories of frequent common colds and influenza were divided into two groups and received preventative treatment with *Huang Qi*. One group received 5 grams of *Huang Qi* in pills three times daily, and the other group received 15 grams of *Huang Qi* in decoction every other day. All patients had two courses of 10 days treatment, with 5 days of rest in between courses. The study reported that patients in both groups had similar results. Both had 2.7 times lower risk of infection, and a shortened duration of infection.¹⁵
- **Prevention of pulmonary tract infection:** An herbal tea of 15 grams of *Huang Qi* and 10 grams of *Da Zao* (*Fructus Jujubae*), given twice daily, demonstrated marked effectiveness in prevention of pulmonary tract infection in 160 patients with past histories of chronic bronchitis, bronchial asthma, and allergic rhinitis.¹⁶
- **Prevention of upper respiratory tract infection in children:** One report described that 2 ml of *Huang Qi* solution (equivalent to 2 grams of dried herb) given daily, showed 94% effectiveness in prevention of respiratory tract infection in 100 children.¹⁷
- **Rhinitis:** Local injection of a *Huang Qi* preparation every third day for 10 treatments showed a 93.26% rate of effectiveness in 47 patients with rhinitis.¹⁸
- **Prevention of asthma and cough:** A *Huang Qi* preparation was injected (equivalent to 1 gram of dried herb) into *Zusanli* (ST 36) bilaterally twice weekly for three months per course of treatment, for a total of 3 to 4 courses of treatment, with 2 weeks of rest between each course. Out of 41 patients, there was significant improvement in 85.4% and moderate improvement in 56.1%. Furthermore, most patients noticed an increase in appetite and energy, improvement in quality of sleep, and fewer episodes of infection.¹⁹
- **Peptic ulcer disease:** According to one report, patients with gastric ulcers, duodenal ulcers, or both, were treated with intramuscular injections of 2 ml of a *Huang Qi*

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preparation (equivalent to 2 grams of dried herb) twice daily. Many patients showed symptomatic improvement after 1 week. Most patients showed complete healing or moderate improvement after approximately one month.²⁰ According to another report, an herbal decoction containing *Huang Qi* 12g, *Bai Shao* (Radix Paeoniae Alba) 12g, *Gan Cao* (Radix Glycyrrhizae) 5g, *Gui Zhi* (Ramulus Cinnamomi) 10g, *Sheng Jiang* (Rhizoma Zingiberis Recens) 3g, *Da Zao* (Fructus Jujubae) 5 pieces, and *Yi Tang* (Saccharum Granorum) 30g, was given in two equally-divided doses twice daily for 25 to 53 days to treat patients with peptic ulcer disease. Out of 43 patients, 22 reported significant improvement, 17 reported moderate improvement, and 4 showed no improvement. The rate of effectiveness was 90.7%.²¹

- **Gastric prolapse:** Patients with gastric prolapse were treated with an herbal preparation of fresh *Huang Qi*, *Sheng Ma* (Rhizoma Cimicifugae), *Chai Hu* (Radix Bupleuri), and *Wu Wei Zi* (Fructus Schisandrae Chinensis). The treatment protocol was to inject the herbs (dosage equivalent to 1 gram of each herb) intramuscularly into *Zhongwan* (CV 12) and *Zusanli* (ST 36) every other day for 1 month. The rate of effectiveness was 84.9% among 42 patients who participated in the study.²²
- **Rectal prolapse:** Daily administration of an herbal decoction containing 30 to 50 grams of fresh *Huang Qi*, 15 grams of *Dan Shen* (Radix Salviae Miltiorrhizae), 10 grams of *Shan Zha* (Fructus Crataegi), 3 grams of *Fang Feng* (Radix Saposhnikoviae), and 3 grams of *Sheng Ma* (Rhizoma Cimicifugae) showed marked effectiveness for treatment of rectal prolapse.²³
- **Hepatitis:** In one study, 29 patients with chronic infectious hepatitis were treated with intramuscular injections of *Huang Qi* (equivalent to 4 grams of dried herb) for 1 to 3 months, with marked improvement.²⁴ Another report described 174 patients with positive HBsAg who were treated with an injection of a 100% *Huang Qi* preparation. The treatment protocol was to administer one injection every three days for a total of 2 months, alternating between two acupuncture points *Zusanli* (ST 36) and *Shenshu* (BL 23). Out of 174 patients, 131 (75.3%) became negative for HBsAg.²⁵
- **Immune disorder:** According to one report, 14 patients with low white blood cell counts showed marked improvement with an herbal decoction of 30 grams of fresh *Huang Qi*, 15 grams of *Ren Shen* (Radix Ginseng), and 20 pieces of *Da Zao* (Fructus Jujubae).²⁶
- **Reversal of immune suppression:** In an *in vivo* study, administration of *Huang Qi* was associated with reversal of cyclophosphamide-induced immune suppression.²⁷
- **Leukopenia:** Administration of *Huang Qi* was associated with an obvious rise in white blood cell (WBC) counts in

115 patients with leukopenia.²⁸

- **Immune restoration:** Administration of *Huang Qi* and *Nu Zhen Zi* (Fructus Ligustri Lucidi) was reported to act as a potent immune stimulant in 19 cancer patients.²⁹
- **Nephritis:** Twenty patients with chronic nephritis were treated with 100g of *Huang Qi* in decoction, given in two equally-divided doses twice daily for 15 to 90 days. Out of 20 patients, 7 showed significant improvement, 9 showed marked improvement, and 4 showed no improvement. Most patients reported symptomatic improvement as well as a decrease of protein in the urine.³⁰
- **Nephropathy:** *Huang Qi* in large doses has shown beneficial effects against nephropathy in mice and glomerulonephritis in rabbits. Furthermore, large doses of *Huang Qi* are commonly used to treat chronic nephritis in human clinical trials. It increases the volume of urine, and the excretion of chloride and ammonia.^{31,32}
- **Glomerulonephritis:** In one study, 56 patients with chronic glomerulonephritis were treated with intramuscular injection of *Huang Qi* (equivalent to 3 grams of dried herb) for 1 month with marked reduction of protein in the urine (effective rate of 61.7%) and improved kidney function.³³
- **Psoriasis:** Administration of *Huang Qi* (as powder, decoction, injection or topical cream) was used to treat patients with psoriasis with a 95.6% rate of effectiveness. Out of 204 patients, 42 reported marked improvement, 62 reported moderate improvement, 91 reported slight improvement, and 9 reported no improvement.³⁴
- **Pulseless disease (Takayasu's disease):** In one study, 6 patients with this condition were treated with an herbal formula with significant improvement in 3 cases, moderate improvement in 2 cases, and slight improvement in 1 case. The herbal formula contained *Bu Yang Huan Wu Tang* (Tonify the Yang to Restore Five Decoction) with 60 grams of *Huang Qi* and additional blood-activating and blood stasis-removing herbs.³⁵
- **Prostatic hypertrophy:** In one report, 52 patients with prostatic hypertrophy were treated with an herbal decoction taken on an empty stomach. The formula contained 100 grams of fresh *Huang Qi* and 30 grams of *Hua Shi* (Talcum) cooked in decoction, with 3 grams of *Hu Po* (Succinum) added prior to administration. At the conclusion of the study, 38 patients reported complete remission of symptoms, 13 reported improvement in flow rate and reduction in size of the prostate, and 1 reported no improvement.³⁶

HERB-DRUG INTERACTION

- **Aminoglycosides:** In one study, a compound injection of *Huang Qi* and *Lu Han Cao* (Herba Pyrolae) in guinea pigs was found to be effective in preventing ototoxicity

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and nephrotoxicity associated with use of aminoglycosides.³⁷ [Note: Examples of aminoglycosides include gentamicin, tobramycin, amikacin.]

- It has been demonstrated that *Huang Qi* has an inhibitory influence on copper-induced oxidative stress. According to studies, the effect of *Huang Qi* is similar to that of mannitol and of superoxide dismutase as free radical scavengers.³⁸

TOXICOLOGY

Huang Qi has very low toxicity. Oral ingestion of *Huang Qi* decoction (7.5 g/kg) cannot be determined in rats. The LD₅₀ in mice for intraperitoneal injection is approximately 40 g/kg.³⁹

AUTHORS' COMMENTS

According to Dr. Zhang Xiao-Ping, the combination of *Huang Qi* and *Shan Yao* (Rhizoma Dioscoreae) has excellent effects to lower plasma glucose levels to treat diabetes mellitus patients. These two herbs are especially effective in individuals with diabetes characterized by qi and yin deficiencies.

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