

Lei Genping's Experience in Treating Recurrent Urinary Tract Infection

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Abstract: In modern medicine, the therapeutic effect in recurrent urinary tract infection is often unsatisfactory. Lei Genping believes that urinary tract infection is mainly caused by the evil of dampness and heat invading the lower jiao (area below the navel). A prolonged disease course would result in the deficiency of spleen and kidney as well as the stagnation of liver and qi. The initial treatment should focus on clearing heat and detoxifying dampness. In the long run, the treatment criteria include tonifying the spleen and kidney, while clearing heat and dampness as well as regulating liver qi.

Keywords: Recurrent UTI; Deficiency of spleen and kidney; Lei Genping; Clinical experience

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1. Introduction

Urinary tract infection (UTI) is a common clinical urinary system disease caused by the growth and reproduction of pathogenic microorganisms, such as Escherichia coli and gram-negative bacteria, in the urinary tract. Its main symptoms include frequent urination, urgency, dysuria, burning sensation in the urethra, turbid urine, suprapubic pain, pelvic pain, and other symptoms. However, a few patients may also present with hematuria. Recurrent UTI can be diagnosed when there are more than two attacks within six months or at least three attacks within a year. According to an epidemiological survey, recurrent UTI is ranked as the second most common infectious disease among the elderly, with an incidence of 16% to 43.3%, only after respiratory tract infection. It is more prevalent in women than in men, and it has an increasing trend with age ^[1]. Depending on patients' age, deficiency in body elements, comorbidities, decline in visceral functions, estrogen levels, immunity level, susceptibility to pathogens, and the efficacy of treatment, the clinical course may lengthen, and in severe cases, patients may develop chronic pyelonephritis or even renal failure, which will have a negative impact on their daily lives. In recent years, many reports have shown that due to the abuse of antibiotics, pathogenic bacteria have higher resistance to many antibacterial drugs. At present, modern hospital treatment cannot reduce the recurrence rate; instead, it causes many adverse effects, such as double infection, antibiotic resistance, etc. ^[2]; urinary tract irritation, lumbar pain, abdominal distension, and other typical symptoms cannot be resolved, and the side effects on liver and kidney cannot be underestimated ^[3]. For this condition, there are many traditional Chinese medicine treatment methods, and after years of clinical experience, the treatment efficacy is more prominent with less adverse reactions ^[4]. Lei Genping, the chief physician in Shaanxi University of Traditional Chinese Medicine Affiliated Hospital, has been engaged in clinical work for more than 30 years, thus having rich clinical experience and unique insights on the treatment of recurrent UTI.

2. Etiology and pathogenesis

As mentioned above, the pathogenesis of UTI is mainly based on damp-heat evil, kidney deficiency, liver depression, and so on. However, congestion is still one of the main pathogenic factors. Zhu Danxi once put forward that when blood is subjected to heat and humidity, it will become turbid ^[5]. Due to prolonged and recurrent gonorrhea, damp turbidity accumulates in the body and the mechanism of qi in the three jiao stagnates, which eventually lead to blood stasis. The main cause of congestion is the evil of dampness and heat. Dampness damages yang qi and causes congestion by inhibiting qi with its heavy turbidity and stickiness. The evil of dampness and heat, qi stagnation, and blood stasis are all interrelated, in which they are the pathological products and causation of each other. These factors are the cause of the disease's long-term recurrence and poor recovery. Liu Ziheng's "Clinical Experience Memoir" discussed a blood drench medical case record where 30 grams of *Achyranthes Bidentata* BI. and 3 grams of frankincense were used to treat blood drench, in which the effect was proven. In the clinical treatment of patients with chronic drench syndrome, drugs are often combined to promote blood circulation and remove blood stasis, such as *Achyranthes bidens*, *Radix paeoniae*, Tree Peony Bark, frankincense, peach kernel, myrrh, etc.

3. Syndrome differentiation

3.1. Drench syndrome with hot and humid bladder

Heat is more crucial than wet as the key mechanism. At the early stage of drench syndrome, due to the evil invasion of hot and humid, toxic accumulates in the bladder. As stated in the "Complete Compendium of Zhang Jingyue," "the beginning of the disease is all because of the heat factor, without discrimination ^[6]; heat is a positive evil, but heat evil itself cannot lead to drench syndrome; therefore, dampness evil is an important pathogenic factor of drench syndrome; whether or not the invasion of dampness evil or internal injury is caused by dampness, it easily leads to the accumulation of heat evil and dampness evil in the lower bladder, resulting in drench syndrome ^[7]. At the early stage of the disease, the condition is more positive and milder. Clinically, Lei Genping uses the eight-herb powder to clear heat and relieve diarrhea. If the evil of damp and heat cannot be completely removed, the damp and heat will be concealed in the body for a long time, resulting in kidney and spleen injuries. In case of fatigue, emotional changes, and poor diet, repeated attacks may lead to drenching. It can be seen that the essence of the condition has always belonged to the essence of deficiency, and the evil of dampness and heat is a crucial factor in its pathogenesis. In treating the condition, it is important not to disregard hot and humid, as well as factors of the virtual body, so as to avoid choosing products that deviate from hot and humid and those that easily damage the stomach. The commonly used medications are Twotooth *Achyranthes* Root, frankincense, *Agrimoniae herba*, tuckahoe, and *Alisma*, coix seed, in addition to raw *Radix rehmanniae*, *Eucommia* bark, *Taxillus sutchuenensis* (Lecomte) Danser, and others, which not only tonify the kidneys, but also drain dampness without harming the healthy environment.

3.2. Tonifying spleen and kidney

Kidney qi deficiency is inherited; thus, gasification has no right to viscera dysfunction ^[8]. The most common urinary tract irritation symptoms in patients include stranguria, especially at night, accompanied by fatigue, cold intolerance, as well as lumbar and lower abdominal pain. The foregoing symptoms, as well as recurring infections, are not indicative of renal yang deficiency, kidney qi deficiency, renal failure, water excretion abnormalities, and renal deficiencies. Therefore, in the early stage of drench syndrome ^[3], there is usually kidney deficiency, which lasts for a long time. In addition, drench syndrome is mainly positive and classified under heat syndrome in the beginning, in which drugs for cold and heat clearing are often used. If the patient is deficient by nature, the patient would be more susceptible to dampness and heat toxic evil, which will most likely cause damage to the spleen, leading to injuries in both the kidneys and spleen

over several days; hence, the disease will not be cured ^[9]. According to the “True Story of Medicine,” kidney deficiency is extremely drench when tonifying kidney and urine, not alone with water medicine ^[10]. Therefore, Lei Genping believes that tonifying kidney and spleen should be the main treatment method throughout the disease. Lei’s treatment of drench syndrome with aconite tablets showed obvious effects. The composition of the drug includes aconite, licorice, Dangshen, Atractylodes ^[11], and dried ginger to supplement the spleen yang temperature. In addition, the kidney four taste (kidney four taste, also known as Li Ke, which is made from wolfberry, Epimedium, dodder, pku fat) strengthens kidney qi, along with kidney yin and yang. When the yin and yang of the kidney, spleen, and qi are not warmed and toned, tonifying the kidney with peiyuan, reinforcing the deficit, and strengthening the foundation can help stimulate good qi and prevent evil from invading the body ^[12]. However, when the onset of drench syndrome is mainly to clear heat and detoxify dampness, tonifying spleen and kidney can be used as an auxiliary, in order to avoid excessive tonifying, which retains evil in the body.

3.3. Dredging liver (focus of the treatment)

In traditional Chinese medicine, there is a saying that goes “liver and kidney are of the same origin.” Liver and kidney are closely related, and the drainage function of liver also regulates the metabolism of water in the body. If the evil of dampness and heat accumulates in the body over a long period of time ^[13], yin injury and gas consumption, resulting in the deficiency of kidney yin, liver displacement and nourishment, as well as liver and kidney deficiency may prolong. According to “Huang Di Nei Jing: Lingshu Jizhu,” the liver governs the draining system, and enuresis is caused by excessive and hot pathogens in the liver meridian. According to clinical guidelines, the idea of “drenching the liver and gallbladder” has also been put forward ^[14]. The catharsis function of the liver is abnormal, thus resulting in liver qi stagnation, qi blockage, qi fire over a long period of time, and the accumulation of lower coke; all these eventually lead to urine stagnation and strangury. Early treatment is urgent for patients with heavier burdens, anxiety, and depression; these patients tend to be irritable, heave long sighs, etc. Treating with modern medicine is usually ineffective and requires repetition. The principle of treatment is to select multiple drugs, such as Radix bupleuri, Radix linderae, Atractylodes, Radix paeoniae alba, green husk, etc., to target the liver and spleen as well as to resolve depression and qi. If the liver is hot and the stomach is bitter, *Scutellaria baicalensis* can be used to clear the bile and stomach ^[15].

4. Medical record

JM, a 46-year-old female, was first diagnosed with the condition on March 9, 2021. Her chief complaint was abnormal urine test for more than 20 years. Twenty years ago, the patient developed frequent and urgent urination without inducement; she felt a burning sensation over her urethral orifice and had discomfort when urinating. Her condition often recurred. Five years ago, she developed gross hematuria and was treated with levofloxacin-sodium chloride injection, but the effect was poor. She had frequent urination, urgency, cloudy urine, pain over her urethral orifice, discomfort when urinating; soreness, and lumbago; other than that, she had cold intolerance, irritability, sweating, poor appetite, stomach distension upon eating, heartburn, dry mouth, bitter taste in the mouth, sleep disturbances, and dreams; although she defecated once a day, she had abdominal distension along with flatulence. Upon examination, her tongue was red and thin, and her pulse was thin and weak. Upon investigation, she was positive for urine occult blood (++) and urine protein (+++); the urine red blood cell was 296.20/uL, whereas urine white blood cell was 27.50/uL. The TCM diagnosis was drenching syndrome with kidney deficiency and liver depression spleen deficiency type. The treatment was focused on tonifying kidney and liver as well as invigorating spleen and dampness. Chai Ling Tang was prescribed, in which it is made from 15 grams of *Grifola*, 20 grams of *Alisma*, 15 grams of bran-fried *Atractylodes poria cocos*, 30 grams of cogongrass rhizome, 20

grams of salt dodder, 10 grams of cassia twig, 3 grams of vinegar frankincense, 30 grams of plantain, 20 grams of medlar, 20 grams of Bupleurum chinense, 15 grams of Radix scutellariae, 10 grams of jujube, 15 grams of Pinellia, and 10 grams of Dangshen. She was given 15 doses. On March 24, 2021, during her follow-up, she had no frequent urination, urgency, or cloudy urine, with significant improvement in the burning sensation over her urethral orifice. However, she had occasional lumbago. She was relieved of her general fatigue, and her appetite and sleep improved; her bowel movements were normal (once a day). Upon examination, she had red tongue, thin moss, and thin pulse. Investigation showed urine protein +/- and urine occult blood +; urine red blood cell was 58.50/uL. Twenty grams of licorice, 10 grams of soil tuckahoe, and 20 grams of lotus leaf were added to the prescription. She was given a total of 15 doses. After re-examination, her symptoms improved, and all indicators were normal.

According to Lei Genping, Chai Ling Tang is made of Wuling Powder and Xiao Chai Hu Tang (small bupleurum decoction). In the decoction, bupleurum is used as medicine to relieve the evil of shaoyang and qi stasis; it relaxes the liver and strengthens the spleen and stomach; it also improves stomach distension, appetite, and heartburn. Radix scutellariae clears heat, strengthens the gallbladder and stomach, as well as helps with the bitterness in the mouth. Combined with Scutellaria baicalensis, Radix bupleurum not only regulates the qi mechanism, but also harmonizes the liver, bile, spleen, and stomach; it can be used to smooth the qi mechanism and restore the function of the spleen and stomach. Pinellia with ginger ^[16] disperses cold to remove cold phlegm, dispels the obstruction of qi and blood, as well as improves fatigue. Ginger has the effect of restricting the poison in Pinellia. Wu Ling San formula is used for the infiltration of ze xie in the kidney and bladder. In order to enhance the effect of water infiltration, Poria cocos can be added. Baizhu has the effect of benefitting qi as well as invigorating spleen and dampness. With cassia twig in the bladder, it warms yang and relieves qi; hence, the function of relieving urine is strengthened, which not only solves the surface evil of the sun, but also gasifies the bladder and helps in its recovery ^[17]. Small bupleurum decoction is used in conjunction with Wuling Powder for the symptoms of dampness in the body, especially for the symptoms of evil. Lei Genping tends to use Li Ke's four kidney flavors: dodder seed, wolfberry seed, Psoraleae, and Epimedium. During the second follow-up, the patient's frequent urination and urgency resolved, with the alleviation of urethral pain and burning sensation; routine urine examination also showed occult blood in urine (+), which took a long time to heal due to dampness and heat toxin trapped in the bladder. Therefore, 20 grams of lotus and 10 grams of soil poria were added to strengthen the heat-clearing effect and the removal of dampness.

Disclosure statement

The authors declare no conflict of interest.

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