HERBAL EXTRACT COMPANY

THE NATUROPATH'S GUIDE

URINARY TRACT INFECTIONS

A focus on the herbal approach for managing urinary tract infections (UTIs)

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CRATEVA
(Crateva magna)

URINARY TRACT INFECTIONS

Put simply the term UTI refers to an infection in the urinary system which can occur in any part of the urinary tract such as the bladder, urethra, ureters and kidney.

UTIs are one of the most common bacterial infections managed in general practice. They are also a frequent cause of hospitalisations for infections among elderly people and the most widespread indication for antibiotic prescriptions.

Condition Overview

Most UTIs are confined to the bladder in the lower urinary tract and, while causing debilitating symptoms, are not generally contagious or dangerous unless they spread to the kidney. Recurrent kidney infection can cause progressive damage resulting in scarring and, for some, kidney failure which means lifelong dialysis or kidney transplant. It is therefore important to diagnose a UTI early and treat patients with acute UTI adequately. There are different technical terms for where the infection is located. Cystitis (the most common UTI) is an infection in the bladder, urethritis is in the urethra and pyelonephritis is in the kidneys. Normally the urinary tract is sterile but bacteria, both Gram-negative and to a lesser degree Gram-positive, as well as certain fungi can enter through the urethra, infect the urine and inflame the bladder lining in the case of cystitis. *Escherichia coli (E. coli)* is the organism that causes UTIs in most patients and other common pathogens include *Klebsiella pneumoniae, Proteus mirabilis, Enterococcus faecalis, Staphylococcus saprophyticus, group B Streptococcus* (GBS), *Pseudomonas aeruginosa, Staphylococcus aureus* and *Candida spp.* Recurrent UTIs are mainly caused by reinfection by the same pathogen.

UTIs are more common in women and if a male under the age of 50 has UTI symptoms he should see a doctor as it is quite rare. Anatomically speaking women are more susceptible to UTIs than men because they have smaller urethras so the female urethra is closer to the anus (and its bacterial load). However men become more susceptible if they have benign prostatic hyperplasia (BPH), also known as prostate gland enlargement. Almost half of all women will experience at least one episode of cystitis during their lifetime.

UTIs are classified into six categories. Most UTIs are in the uncomplicated category being caused by a transient infection of a single strain of proliferative bacteria in individuals who are otherwise healthy and have no structural or neurological urinary tract abnormalities. These infections are differentiated into lower UTIs (cystitis) and upper UTIs (pyelonephritis). UTIs in the complicated category are caused by urinary tract dysfunction, urinary retention caused by neurological disease, immunosuppression and medical conditions (such as diabetes, multiple sclerosis, human immunodeficiency virus (HIV) or acquired immune deficiency syndrome (AIDS)), renal failure, renal

transplantation, pregnancy and the presence of foreign bodies such as calculi, catheters or other drainage devices. The third category, an isolated infection, is when it is the first episode of UTI or the episodes are six months apart. Unresolved infection is when therapy fails because of bacterial resistance or due to infection by two different bacteria with equally limited sensitivities. The fifth category, reinfection, occurs where there has been no growth after a treated infection but then the same organism regrows two weeks after therapy, or when a different microorganism grows during any period of time. Relapse is when the same microorganism causes a UTI within two weeks of therapy however it is usually difficult to distinguish a reinfection from a relapse.

Common Symptoms

One or more of these symptoms could indicate a UTI:

- Frequent urge to urinate (with little urine)
- Burning pain and scalding sensation upon urination "like passing razor blades"
- Low back ache or abdominal pain
- Cloudy, bloody, dark or smelly urine
- A feeling that the bladder is still full after urinating
- Pain above the pubic bone

Kidney infections are very serious so patients should seek medical attention immediately if they also suffer from:

- Fever and chills
- Nausea and vomiting
- Severe low back pain or lower abdominal pain

Risk Factors

Women

UTIs occur more often in women than in men at a ratio of 8:1. Approximately 50 to 60 per cent of women report at least one UTI in their lifetime and one in three will have at least one symptomatic UTI necessitating antibiotic treatment by the age of 24.

Sexual Activity

Sexual intercourse frequency is the strongest risk factor for UTIs in younger populations. Post coital cystitis is also known as honeymoon cystitis because it can be brought on by frequent sexual activity. Cystitis after intercourse accounts for 60% of recurrent cases. Specific risk factors related to sexual intercourse include frequency (four or more times per week), the use of spermicides that may alter vaginal pH and thus affect its flora (particularly the *Lactobacilli* component) and engagement with a new sexual partner within the last year. In a prospective study there was a high incidence of symptomatic UTIs among sexually active young women and this was strongly and independently associated with recent sexual intercourse and use of a diaphragm with spermicide, as well as with a history of recurrent UTIs.

A Prior UTI

The most consistent and strongest predictor for UTI across all age groups is having a history of UTI. In one study postmenopausal women with a prior UTI were over four times more likely to develop a subsequent infection compared with women without a previous diagnosis.

Contraceptives

Contraceptive use is a significant risk factor for acquiring UTI with the barrier methods being more predisposing. The high prevalence of UTIs amongst barrier contraceptive users may arise from unhygienic conditions during application of the condom which is a common barrier method. Unlubricated condoms may scrape the vaginal wall and make it vulnerable to infections. It has been suggested that users of barrier methods are likely to have increased vaginal fluid pH, alterations in normal vaginal flora and increased rates of vaginal canal colonisation with *E. coli* which are all associated with UTI. The part played by the hormonal contraceptives in the aetiology of UTI has been reported to a lesser degree. The effects of progesterone on muscle tone, peristalsis of the ureters and also on the urinary vasculature may account for the UTI in women who use hormonal contraceptives.

Genetic Susceptibility

A greater predisposition for vaginal colonisation by uropathogens appears to run in families potentially due to the increased ability of bacteria to adhere to the epithelium due to an increased expression of *E. coli* receptors on vaginal epithelial cells. An additional genetic factor which aids binding of uropathogens is related to a patient's blood group. Susceptibility appears to be related to secretor status. A secretor is a person who secretes their blood type antigens into body fluids and secretions like the saliva in the mouth, the mucus in the digestive tract and respiratory cavities etc. A nonsecretor puts little to none of their blood type into these fluids. The vaginal epithelia of nonsecretor women express lipids which bind to pathogens more avidly increasing risk of infection. Human and pre-clinical data suggest that genetic variations which regulate the efficiency of the innate immune system are central to familial history of UTI.

Dehydration

Adequate hydration is important and may improve the results of antimicrobial therapy in UTI.

Men with Prostate Problems

In men older than 50 the prostate gland (a gland near the bottom of the bladder close to the urethra) can enlarge and block the flow of urine from the bladder. This condition is known as BPH and it can prevent the bladder from emptying completely which increases the likelihood that bacteria will grow and trigger an infection.

Vaginal Infection

Bacterial vaginosis is the most common vaginal infection and it is mainly associated with sexually transmitted diseases. Association of bacterial vaginosis with UTI (and vice versa) probably begins with an increase in the pH of the vagina because of a reduction of vaginal lactobacilli. The normal vaginal flora may be replaced by predominantly anaerobic flora. Frequent sexual intercourse, which was also linked to both these infections, may also contribute to this phenomenon.

Diabetes and Obesity

UTIs are more common, more severe and carry worse outcomes in patients with type 2 diabetes. They are also more often caused by resistant pathogens. Various impairments in the immune system, poor metabolic control and incomplete bladder emptying due to autonomic neuropathy may all contribute to the enhanced risk of UTI in these patients. Obesity may be a predisposing factor to UTIs and control of body weight early in life in children with UTIs may help prevent future chronic kidney disease. In women with type 1 diabetes studies demonstrate that UTI is associated with poor glycaemic control. This relationship is independent of other risk factors for UTI and suggests that factors directly related to glycaemic control may affect UTIs.

Advancing Age

UTI is one of the most commonly diagnosed infections in older adults. It is the most frequently diagnosed infection in long term care residents accounting for over a third of all nursing home associated infections. This risk is likely multifactorial including increasing rates of urinary incontinence and urinary retention, hospitalisations and accompanying urinary catheterisations, long term medical institutionalisation and immune deterioration with age.

Having a Urinary Catheter

Catheter acquired UTI is one of the most common health care acquired infections. In this category 70 to 80 per cent of these infections are attributed to use of an indwelling (inside the body) urethral catheter.

Menopause

Post menopausal women have higher rates of UTIs because of pelvic prolapse, lack of oestrogen, loss of lactobacilli in the vaginal flora, increased periurethral colonisation by *E. coli* and a higher incidence of medical illnesses such as type 2 diabetes.

Pregnancy

Changes in the urinary tract and immunologic changes during pregnancy predispose pregnant

women to UTIs. Physiologic changes of the urinary tract during pregnancy include dilation of the ureter. This occurs due to progesterone related smooth muscle relaxation. Decreased bladder capacity commonly results in urinary frequency. Urinary catheterisation, frequently performed during labour, may introduce bacteria leading to UTI. In the postpartum period changes in bladder sensitivity and bladder overdistention may predispose women to UTI.

Infants

UTI is common in nappy wearing infants. It may indicate an underlying renal disorder but most cases occur in the absence of any abnormalities. A clear male predominance has been associated with neonatal UTI with boys making up approximately 70 to 90 per cent of all cases. Uncircumcised boys are at the highest risk for neonatal UTI. A history of maternal UTI during pregnancy has been associated with up to a 5.9 fold higher risk of UTI in infants. After the first 12 months girls are more likely to be diagnosed with a UTI. Prompt diagnosis and initiation of treatment is important in preventing long term renal scarring.

Rheumatoid Arthritis (RA)

During the last four decades extensive data has indicated that subclinical urinary tract infection by *Proteus mirabilis* has a role in the development of rheumatoid arthritis based on molecular mimicry. Proteus is normally a friendly gut bacteria but in some people it migrates from the gut/vagina to the urinary tract and causes an asymptomatic UTI infection. Once in the urinary tract it produces urease (which is highly toxic). The body then produces antibodies to the urease. The proteins in *Proteus urease* molecules are very similar to the proteins in type XI collagen (a component of hyaline cartilage in the small joints) and molecular mimicry occurs. The antibodies to Proteus urease bind to tissues containing collagen XI which causes damage and synovial inflammation.

Note

Certain behaviour patterns such as pre and post coital voiding, frequency of urination, delayed voiding habits, wiping patterns, douching, hot tub usage and choice of clothing may have an association with risk of UTIs however there needs to be further investigation to provide evidence.

How To Get The Correct Diagnosis

The first step in the management of UTI is to obtain a detailed history and perform a thorough physical examination as this will help to uncover underlying abnormalities or modifiable risk factors. A proper history must include information relating to previously documented UTI episodes including number, frequency and other contributing factors. Other important information includes menopausal status, recent antibiotic use and sexual history, including number of partners, new partners, spermicide use and use of barrier contraceptives. A physical examination includes a complete pelvic examination in which the quality of the vaginal epithelium and presence or absence of pelvic organ prolapse is assessed. The urethra should be carefully palpated. Additional investigations are generally unnecessary in patients with a history of uncomplicated lower UTI. If the history or physical examination are suggestive of complicating factors then further evaluation with postvoid residual urine volume, urinary tract ultrasound and cystoscopy may be justified.

Despite the frequency with which UTIs present to hospitals they (especially complicated UTIs) cause considerable confusion, diagnostic uncertainty and a source of significant inappropriate antibiotic prescriptions. Both diagnosis and management of lower and upper UTIs provides challenges in clinical practice due to their high prevalence and recurrence, and worldwide increase of antibiotic resistance. Accurate diagnosis and early treatment are crucial due to the risk of septicaemia, to target appropriate therapy, to limit inappropriate antibiotic use and long term consequences. Confusion about several key issues complicates the approach to UTIs. These issues include (particularly among older adults) poorly defined clinical criteria to diagnose UTIs, reliance on laboratory criteria rather than clinical symptoms to define infection and limited guidance regarding the use and interpretation of diagnostic tests. The diagnosis of UTI requires clinical symptoms of infection localising to the urinary tract, or nonspecific symptoms of infection

in the absence of symptoms suggesting infection elsewhere, laboratory evidence of pyuria (which indicates an inflammatory reaction in the urinary tract) and bacteriuria (the presence of bacteria in the urine) and the absence of another infection or non-infectious process to which the patient's symptoms can be readily attributed. The gold standard for the diagnosis of UTIs is the detection of the pathogen in the presence of clinical symptoms. The pathogen is detected and identified by urine culture (using midstream urine) although it is both time consuming and costly. New research suggests testing for UTI should be ordered only when suggestive clinical symptoms are present as laboratory tests alone cannot differentiate asymptomatic bacteriuria from infection. The value of urinalysis is as an exclusionary rather than a confirmatory tool for UTIs.

Conventional Treatment & Prevention

The initial treatment of a UTI is typically a urine alkalinising agent (e.g. Ural) to relieve symptoms in conjunction with a high fluid intake and complete bladder emptying. If the symptoms do not subside, or become worse, then treatment is usually with antibiotics however these treatments can result in long term alteration of the normal microbiota of the vagina, and gastrointestinal tract, and in the development of multidrug resistant microorganisms. High rates of recurrent UTIs suggest that antibiotics are not an effective therapy for all UTIs. If antibiotics do not work a culture may be done to determine what kind of bacteria it is to find a more specific antibiotic. Antifungals are often routinely given since the antibiotics can readily cause yeast infections. Simple analgesics such as paracetamol are recommended for pain. Serious infections may require treatment in hospital. A number of different vaccine strategies have been developed in an attempt to prevent recurrent UTIs however to date clinical success has been limited and therefore no licensed vaccine is available for recurrent UTI prevention. With rare exceptions treatment for UTI should not be given when a patient has a negative urinalysis or urine culture. In a clinically stable older adult with nonspecific symptoms of infection but no localising genitourinary tract symptoms, active monitoring and oral hydration may prevent the need for antibiotics for UTI. Women with recurrent UTIs need to be properly investigated by urinalysis, urine cultures and other radiological techniques in order to rule out causes of recurrence, as well as to assess possible anatomical or functional urinary tract abnormalities. Although standard UTI therapy starts with antimicrobial therapy alternative strategies are available to reduce exposure to antibiotics such as the use of methenamine salts, probiotics, cranberry juice and vaginal oestrogens in postmenopausal women. Continuous antibiotic prophylaxis, postcoital antimicrobial prophylaxis and acute self-treatment are treatment strategies used by conventional doctors for reducing the number of recurrent UTIs in some patients. Management of recurrent UTIs involves counselling on the characteristics of reinfection and relapse. This includes general therapies advice such as encouraging patients to increase fluid intake, encouraging complete bladder emptying and preventive measures related to sexual intercourse.

"The Herbal Extract Company founder Lyndsay Shume's cystitis mix: buchu, golden seal, echinacea, burdock, liquorice, marshmallow, cornsilk."

INTERVENTION	Anti-inflammatory	Astringent	Bladder/renal tonic	Demulcent	Diuretic	Immunostimulant	Urinary disinfectant
Buchu					✓		✓
Clivers	✓				✓		
Cornsilk	✓			✓	✓		✓
Couchgrass	✓			✓	✓		
Crateva	✓		✓		✓		✓
Echinacea	✓					✓	✓
Golden Rod	✓	✓	✓		✓		
Juniper	✓				✓		✓
Marshmallow	✓			✓	✓		
Nettle Leaf	✓	✓			✓		
Parsley Root	✓				✓		✓
Yarrow		✓			✓		✓

Natural Therapies For Treatment & Prevention

The infective nature of UTIs is interpreted by naturopaths as a sign of lowered immunity, stress and hygiene concerns so the primary goal is in enhancing the individual's internal defences. This can be done by enhancing the flow of urine, promoting a pH that will inhibit the growth of organisms, preventing bacteria from attaching to the lining of the bladder, eradicating pathogens with antimicrobials, enhancing the immune system and reducing inflammation of the urethra and bladder. The occasional acute UTI is easily treated however treating chronic infections requires determining the underlying cause. These can include structural abnormalities, excessive sugar consumption, food allergies, nutritional deficiencies, chronic vaginitis and current or childhood sexual abuse. Herbs, especially when taken at the onset of the infection, can be very effective at taking care of routine UTIs however patients should be monitored closely. If it is an adult case give 3 to 5mL every two to three hours in warm water and increase tepid fluids of water. Then slowly decrease as the symptoms decrease. Continue to take the herbs for two to three days after symptoms are completely gone. Take a break for five days then continue taking another antimicrobial or urinary disinfectant to make sure it has cleared up.

A therapeutic approach could include these factors:

Diet

Includes general support of optimal digestive function. Encouraging healthy bacterial balance may be achieved by preventing dysbiosis and promoting healthy gastrointestinal bacteria populations. As most infections are the result of *E. coli* from the digestive tract promoting a diet that favours healthy microflora ratios may be beneficial in reducing the incidence of UTI.

Optimise Hydration

Patients should be advised and encouraged to drink plenty of fluids (two to three litres per day) including herbal teas. Barley water is a traditional remedy. Boil one litre of water with a handful of barley, simmer and reduce by half and drink when cooled.

Immune boosting and antioxidant rich food

Bone broths, garlic, onions, orange and purple coloured vegetables, berries, wholegrains, complex carbohydrates, cold pressed oils and healthy proteins. Vitamin D3 from the sun (if possible) is a therapy to support the immune system.

Optimise Digestive Function and Microflora Colonisation

Fermented foods and probiotics can be helpful especially if antibiotics are being taken. E.g. natural yogurt with no added sugar, kefir, miso paste or sauerkraut.

Balance pH

The North American cranberry *(Vaccinium macrocarpon)* is recommended for prophylaxis in women with recurrent UTIs as a nutritional alternative. It can also be taken throughout the infection. Current clinical evidence clearly indicates a possible benefit overall from the use of cranberries against UTIs. Cranberry consumption may prevent bacterial adherence to uroepithelial cells reducing UTI related symptoms. Cranberry consumption could also decrease UTI related symptoms by suppressing inflammatory cascades as an immunologic response to bacterial invasion. The recommended doses of cranberry products for the prevention of UTIs have been poorly defined and beverage formulations vary widely. The most highly studied formulation is 25 per cent pure juice. Clinical research suggests that daily doses of 240 to 300mL (at least three times daily, ideally two litres per day) of fresh (i.e. unsweetened) cranberry juice cocktail can prevent 50 per cent of the recurrences of UTIs and can reduce bacteriuria.

What to Avoid

Reduce Immune Suppressant Foods and Urinary Irritant Substances, Regulate Blood Sugar

Overconsumption of sugar and other refined carbohydrates will disturb microflora balance and foster unhealthy organism inhabitation of the digestive and urinary system. If someone is getting frequent UTIs and they also have diabetes, insulin resistance or a high carbohydrate/sugar diet then that underlying cause needs to be addressed to see results (see the naturopath's guide to diabetes). Avoid soft drinks, citrus, tomato, vinegar, artificial

sweeteners, alcohol and caffeine (black tea, coffee, chocolate, coke, decaf and energy drinks) which can aggravate symptoms.

Suspected and Known Food Allergens

Common dietary allergens, such as wheat and dairy, can reduce the ability of the immune system to fight infection.

Lifestyle

Education on:

The Proper Way to Practice Post-Coital Voiding

Healthy women who urinate within 15 minutes of sexual intercourse may be slightly less likely to develop a UTI than women who do not urinate afterward.

The Importance of Avoiding Skin Allergens

Skin allergens introduced to the genital area such as bubble bath liquids, bath oils, vaginal creams and lotions, deodorant sprays, soaps, talcum powder, perfumes, chlorine from swimming pools and washing powder are best avoided as they could alter vaginal flora and ultimately result in UTIs. Avoid tight clothing (including G-strings) and synthetic gym wear. Instead use natural fibre underwear such as pure cotton or bamboo.

Ways to Ensure Personal Hygiene

Women are encouraged to clean the genital areas before and after intercourse, and to wipe from front to back, which will reduce the spread of *E. coli* from the perigenital area to the urethra. Avoid using tampons and wear sanitary pads instead as the strings from tampons can spread bacteria from the anal area. Change regularly (approximately every four hours). To effectively prevent UTIs the sexual partner is advised to adopt the same lifestyle advice.

The Choice of Alternative Forms of Contraception

Women are encouraged to avoid spermicidal contraceptives, diaphragms and vaginal douching which may irritate the vagina and urethra and facilitate the entry and colonisation of bacteria within the urinary tract. Use lubrication to avoid bruising during sex.

Urinating Frequently to Help Flush Bacteria from the Bladder

Holding urine for a long time allows bacteria to multiply within the urinary tract resulting in cystitis.

Avoiding Multiple Sexual Partners

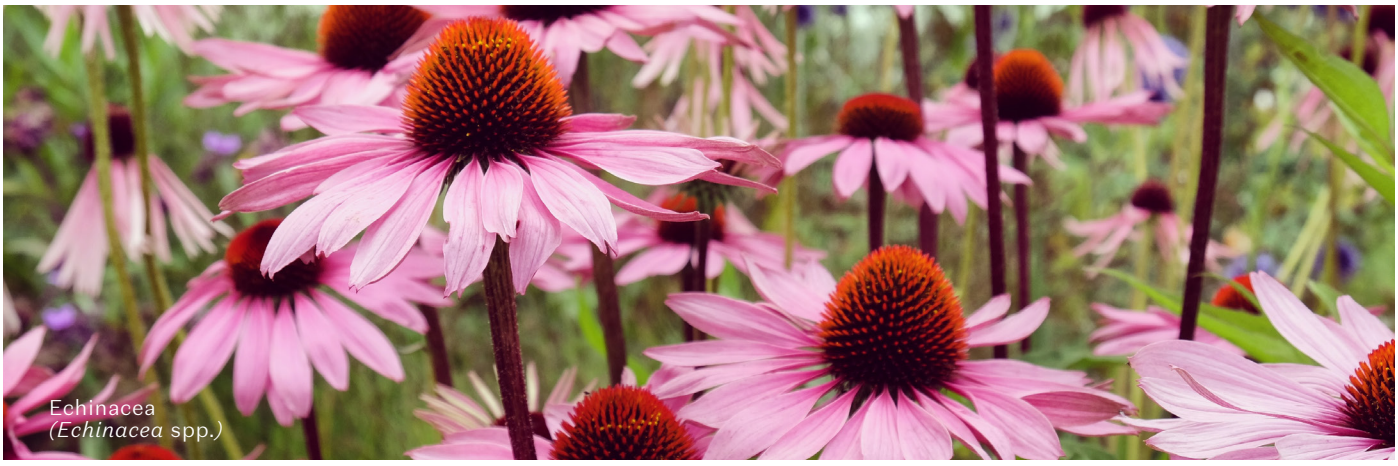
This will reduce the risk of both UTIs and sexually transmitted infections. Anal intercourse increases the likelihood of UTI significantly.

Rest and Relaxation

Stress, overwork and tiredness can all depress the immune system and increase the tendency to infection. Patients should get plenty of rest to give their body a chance to fight the infection.

Helping Relieve Pain

Place a warm pack, such as a wheat bag or hot water bottle, wrapped in a towel on the abdomen or back.



Echinacea
(Echinacea spp.*)*

Potential Treatment Plans

Acute UTI	Buchu	Crateva	Cornsilk	Echinacea	Golden Rod
Cystitis	Buchu	Clivers	Couchgrass	Marshmallow	Yarrow
Chronic or recurring UTI	Clivers	Couchgrass	Echinacea	Juniper	Nettle Leaf
Prophylactic mix	Crateva	Marshmallow	Nettle Leaf	Parsley Root	Yarrow

Cornsilk
(Zea mays)

Desired Herbal Actions and Potential Herbs Include:

Anti-inflammatory

Reduce inflammation in the urinary tract. Herbs such as clivers, cornsilk, couchgrass, crateva, echinacea, ginger, golden rod, juniper, liquorice, marshmallow, parsley root, ribwort.

Astringent

Help to tighten and tone the mucous membranes in the urinary system which is also helpful to prevent reinfection. Herbs such as agrimony, golden rod, horsetail, lady's mantle, nettle leaf and root, pomegranate, raspberry, rehmannia, shepherd's purse, white willow, yarrow.

Bladder/Renal Tonic

Helpful for people who get frequent UTIs and assists with improving the tone and function of the bladder and kidneys. Herbs such as astragalus, bupleurum, crateva, green tea, glossy privet, horsetail, hydrangea, nettle leaf, rehmannia, schizandra.

Demulcent

A soothing effect on the mucous membranes and helps with the discomfort. Herbs such as boldo, cornsilk, couchgrass, lady's mantle, liquorice, marshmallow, ribwort, slippery elm, tribulus.

Diuretic

These herbs will increase urinary output and the excretion of metabolic waste products. Herbs such as astragalus, buchu, celery, chickweed, clivers, cornsilk, couchgrass, crateva, dandelion leaf and root, golden rod, gravel root, green tea, horsetail, hydrangea, juniper, lime flowers, marshmallow, nettle leaf and root, oak bark, parsley root, prickly ash, sarsaparilla, shatavari, tribulus, white willow, yarrow.

Immunostimulant

An important part of adjunct therapy. Herbs such as cats claw, echinacea, elderberry, pomegranate.

Urinary Disinfectant/Antiseptic (antimicrobial)

These herbs inhibit the growth of, or destroy, microrganisms in the urinary tract. Herbs such as barberry, buchu, burdock, cats claw, cornsilk, crateva, echinacea, garlic, golden rod, golden seal, graviola, grindelia, juniper, liquorice, meadowsweet, parsley root, pomegranate, shepherd's purse, thyme, yarrow.

Juniper
(Juniperus communis)

Herbal Support Could Include:

HERB NAME	DESCRIPTION	ACTIONS
Buchu *(Agathosma betulina)* 	For use with a bladder infection and if there is acidic urine. Ethanolic leaf extract of buchu has shown *in vitro* antibacterial activity against *E.coli, Klebsiella pneumonia, Proteus mirabilis, Pseudomonas aeruginosa, Staphylococcus aureus, Staphylococcus saprophyticus* and *Enterococcus faecalis*.	Urinary Disinfectant Diuretic
Clivers *(Galium aparine)* 	Useful for acute or chronic cystitis with swollen lymph nodes and uterine inflammation.	Anti-inflammatory Diuretic
Cornsilk *(Zea Mays)* 	Has been used traditionally for the treatment of uncomplicated UTIs. It is especially useful with excessively alkaline urine and for bladder irritation in children. A recent screening has indicated that a hydroalcoholic extract of cornsilk inhibits the adhesion of uropathogenic *Escherichia coli* to bladder cells.	Anti-inflammatory Demulcent Diuretic Urinary Disinfectant
Couchgrass *(Elymus repens)* 	It is used traditionally as a soothing diuretic and for calming pain and spasm in the urinary tract. The British Herbal Pharmacopoeia notes couchgrass for cystitis with inflammation or irritation of the urinary tract.	Anti-inflammatory Diuretic Demulcent

Herbal Support Could Include: (Cont.)

HERB NAME	DESCRIPTION	ACTIONS
Crateva *(Crateva magna)* 	An Ayurvedic herb used to treat various inflammatory diseases such as UTI. The results of a recent in vivo study indicate that crateva inhibits induced inflammatory responses via negative regulation of extracellular signal-regulated kinase in mouse macrophages suggesting that it is a candidate for alleviating severe inflammation.	Anti-inflammatory Urinary Disinfectant Diuretic Bladder Tonic
Echinacea *(Echinacea purpurea)* 	It improves overall immune responses and also strengthens tissues against assault by invading microorganisms.	Anti-inflammatory Urinary Disinfectant Immunostimulant
Golden Rod *(Solidago virgaurea)* 	Golden rod's chief traditional reputation is as a diuretic for helping to generally cleanse the urinary tract. No single active constituent has been isolated from the plant instead multiple compounds likely contribute to its actions. It has been demonstrated in a double blind, randomised clinical trial to increase urine flow.	Renal Tonic Anti-inflammatory Astringent Diuretic
Juniper *(Juniperus communis)* 	It contains compounds that increase the flow of urine. Useful with chronic cystitis.	Anti-inflammatory Antimicrobial Diuretic

Herbal Support Could Include: (Cont.)

HERB NAME	DESCRIPTION	ACTIONS
Marshmallow *(Althaea officinalis)* 	It soothes the urinary system, inhibits bacterial growth in the urinary tract and strengthens and cleans the bladder.	Anti-inflammatory Demulcent Diuretic
Nettle Leaf *(Urtica dioica)* 	Useful if there is a possibility or history of kidney infection. It builds the blood and is a nutrient rich herb. The root is for BPH. Rat studies clearly show that aqueous extracts of nettle leaf have diuretic effects.	Anti-inflammatory Astringent Diuretic
Parsley Root *(Petroselinum crispum)* 	Humble parsley root has an ancient reputation as a diuretic which cleanses the urinary tract and promotes urine flow. It is approved by the German Commission E for use as a diuretic. It contains several flavonoids, such as apiin and luteolin, and its essential oil contains apiol and myristicin that are linked to diuretic, antioxidant and antibacterial properties *in vitro*. The studies found there was a synergy between different components of the whole herb extract.	Anti-inflammatory Diuretic Urinary Disinfectant
Yarrow *(Achillea millefolium)* 	Works specifically in the urinary tract. Yarrow regulates urination problems and soothes the mucous membrane.	Urinary Disinfectant Diuretic Astringent

Yarrow
(Achillea millefolium)

Conclusion

UTIs significantly affect quality of life and multiple courses of antibiotics can have detrimental long term effects on the delicate ecosystem of bacteria, known as the microbiota, that support immune and general health. An integrative approach using various herbal and nutritional therapies to support and resolve UTIs may provide promise.

Resources

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