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HerbClip™

FILE: ▪Urinary Tract Infections
▪Cystitis

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RE: Review of Herbs for Urinary Tract Infections

Abascal K, Yarnell E. Botanical medicine for cystitis. *Altern Complement Ther*. April 2008:69-77.

Urinary tract infections (UTIs) affect women, uncircumcised boys, the bedridden elderly, and are nearly always caused by enteric bacteria. Expressing molecules which adhere to host cells, *Escherischia coli* and similar organisms cling to perineum, vagina, or foreskin; become established in the urinary bladder; and cause inflammation. Antibiotics, while relieving symptoms, have a weak to nonexistent effect on bacteria adhered to the epithelium. They may adversely affect vaginal and urethral flora, and produce a high level of resistance in bacteria. A cycle of infection may become established.

The best known botanical used for UTIs is cranberry (*Vaccinium macrocarpon*; *V. oxycoccos*). It was used by Native Americans as a food and for UTIs and urolithiasis (kidney stone formation). While it was once thought that cranberry juice achieved its effects by its benzoic acid content, "it would be necessary to drink at least 1500 mL... a day to... maintain the urinary pH... associated with an antibacterial effect." Rather, cranberry disrupts bacterial binding through its proanthocyanidins. Studies support cranberry's efficacy when used prophylactically by individuals with recurring UTIs. There is little evidence that cranberry affects urolithiasis. It may increase some types of stones, and decrease others. Cranberry has no known toxicity and is safe for pregnant or nursing women, but may cause mild upset stomach in some people. Sweetened juice should be avoided.

Other botanicals for UTIs include urinary antiseptics, such as uva ursi (bearberry, kinnikinnick; *Arctostaphylos uva-ursi*) leaf, buchu (*Agathosma betulina*) leaf, nasturtium (*Tropaeolum majus*) leaf, horseradish (*Armoracia rusticana*) root, and berberine-containing herbs such as goldenseal (*Hydrastis canadensis*) root, Oregon grape (*Mahonia aquifolium*) root, barberry (*Berberis canadensis*; *B. vulgaris*) root, and gold thread (*Coptis* spp). Uva ursi contains the phenolic glycoside arbutoside, or arbutin. After absorption, hydrolyzation, and conjugation in the liver, arbutin becomes hydroquinone complexes that, when excreted into

alkaline urine, disassociate, releasing antimicrobial hydroquinone. High fruit or vegetable intake, in most people, alkalinizes the urine enough for this effect to occur, and even concomitant, acidifying cranberry juice intake, in normal amounts, will not interfere. In a double-blind trial, use of uva ursi, standardized to arbutin and methylarbutin for one month by women with recurrent cystitis (three or more UTIs in a year), stopped infections for a year after the study. In the placebo group, 23% had at least one UTI in the following year. Horseradish and nasturtium are each traditionally used for infections. A German trial found a combination of the two safer and as effective as antibiotics against simple UTIs. Buchu leaves, with a long history of use in UTIs, have not been studied. Berberine and herbs containing it have antiadhesion effects similar to cranberry's and other antimicrobial effects. No clinical trials have examined berberine in UTIs.

Aquaretic or diuretic herbs (both increase urinary flow to wash out bacteria) such as Canadian goldenrod (*Solidago canadensis*), lovage (*Levisticum officinale*) root, birch (*Betula* spp.) bark, dandelion (*Taraxacum officinale*) leaf, corn (*Zea mays*) silk, couch grass (*Agropyron repens*) rhizome, buchu, celery (*Apium graveolens*) seed, and juniper (*Juniperus communis*) leaf, have effects which might be beneficial in UTIs; however, none have been studied for this use. Corn silk and couch grass are also demulcents, soothing to urothelial surfaces, as are marshmallow (*Althaea officinalis*) leaf and root, slippery elm (*Ulmus rubra*) bark, globemallow (*Sphaeralcea* spp.) leaf, and hollyhock (*Alcea rosea*) leaf and root. All contain significant mucilaginous material, but none have been studied in relation to UTIs.

Intersitital cystitis (IC) affects mostly middle-aged white women. Symptoms are frequent urinary urgency, burning, and pelvic pain or pressure. Bladder ulceration or infiltration of the bladder wall by mast cells may occur. Higher histamine and methylhistamine levels are found in IC patients than in controls. IC may be an autoimmune disease. In multiherb treatments for IC, anti-inflammatories like goldenrod and quaking aspen (*Populus tremuloides*) bark are often used. Quercetin, an inflammation-modulating flavonoid in many plant foods, relieved symptoms in an open trial. Licorice (*Glycyrrhiza glabra*) root modulates inflammation. Most treatments include aquaretics such as field horsetail (*Equisetum arvense*), although frequency is an IC symptom. Antimicrobials (uva ursi and the more soothing arbutin-containing pipsissewa [*Chimaphila umbellata*]) leaf are included, although the role of bacteria in IC is uncertain. Sedative herbs, such as kava (*Piper methysticum*) or scullcap (*Scutellaria* spp.) relieve pain. Treatment may involve instillation of dimethylsulfoxide (DMSO) into the bladder by a urologist.

For UTIs, foods such as celery, parsley (*Apium petroselinum*), and carrots (*Daucus carota*), which promote urinary flow and generally support the urinary tract, used with herbs, may do more than herbs alone. Any effective treatment of cystitis requires drinking at least 8 glasses of water, unsweetened cranberry juice, or herbal tea daily.

— *Mariann Garner-Wizard*

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