

HERBCLIP

FILE: Cystitis

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RE: **Review of Botanicals Useful in Treatment of Cystitis**

Yarnell, Eric. Botanical Medicine for Cystitis. *Alternative and Complementary Therapies*, August 1997, pp. 269-275.

The common condition of cystitis, or irritated urinary bladder, expresses itself as urinary frequency and urgency, pelvic pain or pressure, and burning upon urination. Conventional treatment with antibiotics may be undesirable or inadequate for many reasons. In the case of interstitial cystitis, a chronic condition that probably does not even involve bacteria, antibiotics are simply irrelevant. Many botanicals have been successfully used, some for millenia, to treat cystitis. This article expresses what is known about the mechanisms of these herbs' effectiveness.

Building on the idea that "bacterial adhesion probably constitutes the first step toward establishing a urinary tract infection," the author explains that *Escherichia coli* and other enteric bacteria "express a number of molecules that allow them to adhere to different cell types," called fimbriae. Many antibiotics exert little or no effect on bacteria adhered to the walls of the bladder; in other words, they may relieve symptoms of acute cystitis but ineffectively address the colonies of bacteria causing the infection.

Some botanicals, including cranberry (*Vaccinium macrocarpon*), blueberry (*Vaccinium myrtillus*), corn silk (*Zea mays*), and couchgrass (*Agropyron repens*), may prevent bacteria from adhering to bladder walls, allowing them to be flushed out by urine. This mechanism of treatment doesn't upset the natural bladder bacterial balance, as does treatment with antibiotics. In a double-blind study involving 153 women with a mean age of 78 years, subjects drank 300 mL of saccharin-sweetened cranberry juice or placebo; more cranberry-consuming subjects with bacteria in their urine subsequently developed sterile urine, than did those on placebo. Contrary to popular opinion, cranberry's principle effect is not urine acidification, as sufficient daily intake for this purpose (1500 mL or more) would be impractical for most people. Three or four 400 mg cranberry capsules should also produce the anti-adhesion effect in UT bacteria.

Other herbs prescribed to treat cystitis are categorized by the author as

urinary antiseptics, diuretics, or demulcents. Theories about interstitial cystitis and its causes include mast-cell infiltration of the bladder wall and subsequent mast-cell degranulation, autoimmunity, disruption of the protective glycosaminoglycan-rich bladder epithelium, or an unusual form of bacterial infection. The most commonly used urinary antimicrobial botanicals include uva ursi (*Arctostaphylos uva-ursi*), buchu (*Barosma betulina*), and several berberine-containing herbs, including goldenseal (*Hydrastis canadensis*), Oregon grape (*Berberis aquifolium*), and various species of gold thread (*Coptis* spp.). “Interestingly,” notes the author, “berberine has been shown to reduce synthesis of, and decrease expression of, fimbriae of *E. coli*, hence preventing adhesion to bladder epithelium. Berberine also blocks *Streptococcus pyogenes* adhesion at concentrations insufficient to inhibit growth.” This anti-adhesion action compliments berberine’s proven antimicrobial qualities. Berberine has not been clinically trialed as a cystitis treatment. The author warns that uva ursi “should not be used long-term” because its component hydroquinone “exerts a number of potentially dangerous effects including suppression of B-lymphocyte maturation.” A milder uva ursi alternative is pipsissewa (*Chimaphila umbellata*).

The author notes distinguished pharmacognosist Varro Tyler’s statement that “most botanicals are not technically diuretics but aquaretics,” meaning that they increase blood flow to the kidneys and thereby raise the glomerular filtration rate, instead of interfering with “kidney handling of ions.” Increased urine flow helps wash UTI-causing bacteria out of the bladder. Such herbs traditionally include dandelion (*Taraxacum officinalis*), corn silk (*Zea mays*), couch grass (*Agropyron repens*), buchu (*Agothosma* spp.), celery seed (*Apium graveolens*), and juniper (*Juniperus communis*). Clinical trials have failed to confirm couch grass’ diuretic properties, but the author believes it may contain enough mannose “to prevent uropathogen adhesion.” Because of irritant oils, celery seed should not be used by people with renal disease; it may also induce photosensitivity. The author tentatively includes horse tail (*Equisetum arvense*) in the aquaretic category, with the caveat that its active constituents may not be extracted in alcohol.

Soothing, anti-inflammatory herbs that may benefit cystitis include corn silk, couch grass, marshmallow (*Althea officinalis*), slippery elm (*Ulmus fulva*), goldenrod (*Solidago virgaurea*), white poplar (*Populus tremuloides*), licorice (*Glycyrrhiza glabra*). The author also recommends kava (*Piper methysticum*) and skullcap (*Scutellaria* spp.) for their sedative properties, although kava has not yet been trialed for this use. Kava should not be used with dopamine antagonist antipsychotic medications. —*Betsy Levy*

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