Herbal Treatment of Inflammation, Part 2

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Editor’s note: Part 1 of this article appeared in the May 6, 2012 issue.

Most chiropractors who incorporate nutrition in their practices are by now quite familiar with basic anti-inflammatory protocols.

Fish oil and GLA, vitamin D, antioxidants, enhancing alkalinity, and recommending less consumption of processed food, dairy and grain are common strategies. Many of our patients are aware of anti-inflammatory herbs such as turmeric, ginger, garlic, and perhaps chamomile and peppermint teas. These culinaries and botanicals can serve as an introduction to a wealth of modulators of anti-inflammatory pathways that have been documented to influence specific cytokine and DNA expression.

In our first discussion of the herbal treatment of inflammatory conditions, the focus was on the herbs astragalus, boswellia, baical skullcap, and cat’s claw, all of which are LOX and COX inhibitors, downregulate TNF-alpha or NO/iNOs production or contain steroidal lactones responsible for their immunomodulatory effects. Today’s exploration of herbal anti-inflammatories includes discussion of Cordata, danshen and Eleuthero, all renowned for their effects on diverse molecules of inflammation including NFkB, TNF-a, COX-2, NO/iNOs, interleukins, VCAMS, and matrix metalloproteinases.

It seems that every week the advertising media touts the health benefits of the latest superfruit source of antioxidants and anti-inflammatory compounds. Now the profit-making apparatus is beginning to shift its focus to the commercial possibilities of herbs. Results have been promising. Turmeric and red pepper have been shown to lower the production of arachadonic acid and lysosomal enzymes in macrophages, and basic culinary herbs have demonstrated effects on collagenase, hyaluronidase, and elastase secretion, thereby downregulating production of pro-inflammatory ecosanoids. Size matters: Think of grams of herb versus ounces or pounds of fruits and vegetables.

The following herbs, derived from the pharmacopeias of Vietnam, China and Siberia, are suitable for singleton (solo) use by new practitioners unfamiliar with more complex formulary principles. Cordata, Salvia miltiorrhiza and Eleuthero, represent three promising frontiers in the herbal
treatment of the damaging, inflammation-driven effects of SARS, atherogenesis and cortisol response.

**Cordata**

*Cordata* (*Houttuynia cordata* Thunb., aka fishwort, lizard tail, heartleaf; roots and leaf) is a culinary herb used in Vietnamese and Chinese cooking and folk medicine. Growing wild in the U.S., it is often considered to be an invasive weed. Recent (2011) research published in the *Journal of Antiviral Research* has shown its ability to inhibit activation of NFkB, preventing both *herpes simplex I* and *II* infections and SARS.

It is known that HSV I and II absolutely require NFkB activation for their replication. The data on *cordata* blocking HSV II infection are particularly convincing. While SARS is a serious acute respiratory syndrome, millions worldwide suffer from chronic HSV I and II infections, with periodic reactivations from stress, sunlight, and arginine-rich foods. Aqueous extracts of *H. cordata* show antioxidant properties, markedly decreasing TNF-alpha, malondialdehyde, SOD, hydroxyproline, interferon-gamma, and tumor necrosis factor-alpha, with special benefits to lung tissue. *H. cordata's* ability to downregulate NFkB production may also positively influence coronary endothelial status, but requires further investigation.

**Danshen / Sage**

Biochemical constituents of danshen / sage (*Salvia miltiorrhiza* Bunge, aka tanshinone, red root sage; dried root) have been studied extensively in recent years, PubMed reports 1,684 recent publications with a strong research interest in the anti-oncogenic properties of tanshinone / danshen. Effects of ethanolic extracts of *S. miltiorrhiza* on downregulation of pro-inflammatory cytokines IL-B, TNF-alpha, IL-6, and NO, and upregulation of anti-inflammatory cytokines TGF-B, IL-10, IL-4, , and IL-1Ra, were investigated in murine macrophages, with conclusive support of danshen’s abilities to exert positive upregulation and downregulation via effects on gene and protein expression. These effects included inhibition of the chemokines RANTES and CX3CL1, and of TLR-4 and 11β-HSD1, both inflammatory mediators.

Danshen has also been shown to reduce serum levels of IL-6, IL-8, and TNF-alpha in patients with pancreatitis, and is known to augment activity of endogenous antioxidant, free-radical- scavenging enzymes. Danshen contains diterpenes (terpenes are phytomolecules important for predation and competition; more than 2,500 different types are known), of which tanshinone I, IIA, and others have been shown to inhibit genetic expression of the IL-12 p40 gene.
Significantly, its diterpenes have also demonstrated ability to prevent NF-κB from binding to the κB receptor, thereby exerting powerful effects upon inflammatory activities of TNF-alpha (pro-inflammatory) and vascular adhesion molecule-1 (VCAM-1), which controls leukocyte infiltration of the vessel wall. *S. miltiorrhiza*’s anti-atherogenic activities have been shown to be profound, including its effects upon matrix metalloproteinases and production of iNOS (inducible nitric oxide synthase).

Do not confuse this Chinese sage with the type you use to stuff the turkey! There are many types of sage, including *Salvia apiana, Salvia officinalis* and *Salvia divinorum*. *Salvia miltiorrhiza*, danshen, has antiplatelet as well as anti-inflammatory actions, and increases peripheral circulation via its "blood moving" (TCM) qualities. Besides diterpenes, it contains salvianolic and phenolic acids. This herb is important for treating tissue damage as found in chronic inflammation, degenerative and traumatic conditions. It is used especially for cardiovascular and cerebrovascular issues.

*S. miltiorrhiza*’s anti-inflammatory actions have shown specificity in targeting inflamed cells. In combination with astragalus, it is noted for significant anti-aging effects including improved cellular immunity and lipofuscin levels. The herb is never used for pregnant females or those seeking pregnancy because its anti-blood-stasis actions may induce miscarriage. *S. miltiorrhiza* is directly contraindicated throughout pregnancy and the prepregnancy state because of its powerful clot-dissolving actions. (In general, use of herbs is not recommended during the formative first trimester of pregnancy unless there is direct threat of spontaneous abortion.)

**Eleutherococcus**

*Eleutherococcus senticosus* (aka *Acanthopanax senticosus*, araliaceae, Siberian or Russian ginseng; root) is a highly prized adaptogen that has been used widely in Russia for chemotherapy and radiation patients, including Chernobyl victims. The best-known components are the eleutherosides A-M. *Eleutherococcus*’s stimulatory effects upon immunity target T-cell production, especially helper T cells. Utilized extensively for anti-rheumatic effects, *Eleutherococcus* has been found to contain MAPK (mitogen-activated protein kinases) and other molecules that affect gene transcription of pro-inflammatory cytokines including iNOS and Akt activation.

The herb also has shown significant protection against stress-induced heart rate response. *Eleutherococcus* mediates vascular dilation via endothelium-dependent NO regulation and can be an important tool for coronary ischemia, PVD, and erectile dysfunction. Intraperitoneal administration of eleutherosides B and D
in test animals increased cytostatic activity of natural killer cells by 200 percent in one week. Eleutherosides have shown similarly dramatic neuroprotective and anti-inflammatory results in atherosclerotic rats via marked downregulation of COX-2 expression.

Key molecular players in the stress response that are favorably impacted by *Eleuthero* include transcription factor DAF-16, JNK-1, HSP 70, and FOXO. As with all adaptogens, anti-inflammatory actions are mediated through the HPA axis, the NO/iNOS mechanism and cortisol response.

**Resources**


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