Dynamic Chiropractic

HERBS/ TEAS & HOMEOPATHY

Boswellia: A New Herbal Breakthrough for Osteoarthritis

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Osteoarthritis (OA) is a common health condition, so it is always interesting to learn of new developments in the treatment of this potentially disabling and painful disorder. The results of recent clinical trials involving the herb *Boswellia serrata* reveal some quite startling results that suggest this Ayurvedic herb is not only capable of relieving OA symptoms, but also might be disease-modifying.

Past research has focused on the role of Boswellia in rheumatoid arthritis (RA). Of course, rheumatoid arthritis is autoimmune in nature and a quite different disease than OA. The thinking at the time was that the particular type of anti-inflammatory activity of Boswellia resin, namely a reduction of leukotrienes via the inhibition of the enzyme 5-lipoxygenase, was more suited to the treatment of RA. This is because of the quite different and very active inflammation present in RA compared to OA.

However, since then it has been discovered that Boswellia can inhibit another important class of inflammatory factors, the cytokines. Cytokines are important to the disease processes of both OA and RA, so this finding has opened up the possibility that Boswellia may help treat OA.

Following that discovery, three clinical trials have demonstrated that Boswellia not only relieves the pain of OA, but also might actually change its course. In other words, Boswellia has the potential to slow the progression of, or possibly even help to regress, this chronic disease. As a result, Boswellia now has our full attention in OA discussions, and is the preferred treatment of many herbal clinicians managing OA.

Trial 1: Helps Improve Movement; Reduces Pain and Swelling

The first trial, published in 2003, was a randomized, double-blind, placebo-controlled, crossover study to assess the efficacy, safety and tolerability of Boswellia extract in 30 patients with osteoarthritis of the knee. Patients were divided into two groups of 15 patients each, with one group receiving active treatment and the other placebo for eight weeks.[1] After the first intervention, washout was given and then each group received the opposite intervention for another eight weeks.

All patients receiving herbal treatment reported a significant decrease in knee pain, increased knee flexion and increased walking distance. Frequency of swelling in the knee joint was substantially decreased, but radiologically there was no change. The dose used was 1,000 mg of extract per day containing 40 percent Boswellic acids. Boswellia was well-tolerated by the patients, with the exception of minor gastrointestinal adverse reactions.

What is striking about this trial is the substantial clinical benefit observed. Results were highly statistically significant ($p<0.001$) and changes in the treatment parameters were quite large. For example, in the first eight-week treatment period (before crossover), the pain index in the Boswellia

group fell from 2.7 to 0.26, the loss-of-movement index was reduced from 2.8 to 0.30, and the swelling index went from 1.1 to zero.

Trial 2: More Effective Over Time Than Popular OA Drug

The second trial, published in 2007, was a randomized study that compared Boswellia extract with valdecoxib, a selective COX-2 inhibitor.[2] Patients, 66 in all, received either 1,000 mg/day Boswellia extract (containing 40 percent Boswellic acids) or valdecoxib, 10 mg/day, for six months. Boswellia was slower in onset than the drug, but by the end of the second month was providing comparable symptom relief.[2] The two treatments worked equivalently for the rest of the trial.

The surprising results were seen one month after *discontinuing* both treatments. There was no residual clinical benefi t from the drug; the patients were back to square one. In contrast, even one month after stopping their treatment, Boswellia patients were still experiencing highly signifi cant relief of their symptoms ($p<0.001$). In other words, the drug was just a symptomatic treatment, and while it worked quicker than Boswellia, it wore off just as quickly. Boswellia was slower in onset but, possibly because it had improved the arthritis itself, patients were still enjoying a benefi t even after its discontinuation.

Trial 3: Disease-Modifying Potential

The third trial was published in 2008.[3] In this trial, 75 patients with knee OA received either Boswellia extract (containing 100 mg or 250 mg of selected Boswellic acids/day) or placebo for 90 days. Boswellia conferred a clinically and statistically signifi cant dose-response improvement in pain and physical function scores. Symptom alleviation was faster in the higher-dose Boswellia group (as early as seven days) and a signifi cant reduction in synovial fluid levels of matrix metalloproteinase-3 (a cartilage-degrading enzyme) was also observed for the Boswellia groups.

Apart from the fact that Boswellia was effective for OA, this trial provided two other valuable fi ndings. While the comparative trial against valdecoxib found that Boswellia was much slower to work than the drug, in this trial, giving more of the Boswellia early on (what could be called a loading dose) yielded faster results. I often do this by starting my patients on double their long-term dose for a few weeks. (The long-term dose, as per the studies, should be about 1,000 mg of extract containing at least 400 mg of Boswellic acids.) The other signifi cant finding was lowered levels of the joint-degrading enzyme. Again, this suggests Boswellia could be diseasemodifying in OA, slowing down the pathological process.

Maximizing Bioavailability

One way to make sure Boswellia works as effectively as possible is to take it with meals, especially a main meal that contains a reasonable amount of fat. In a randomized, open, single-dose, two-way crossover study published in 2004, 12 healthy male volunteers received 786 mg of Boswellia extract either with or without a standard high-fat meal.4 Plasma concentrations of Boswellic acids were measured up to 60 hours after the oral dosing. Administration in conjunction with the meal led to a substantial improvement in the bioavailability of the Boswellic acids. For example, the maximum plasma concentration for the key active component acetyl-11-keto-boswellic acid (AKBA) was 6.0 ng/mL for the fasting group versus 28.8 ng/mL for the group taking Boswellia with their meal. This represents an improvement in bioavailability of at least four times the normal rate.

References

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