



P.O. Box 144345 Austin, TX 78714-4345 ■ 512.926.4900 ■ Fax: 512.926.2345 ■ www.herbalgram.org

HerbClip™

Mariann Garner-Wizard
Jennifer Minigh, PhD

Shari Henson
Heather S Oliff, PhD

Brenda Milot, ELS
Marissa Oppel, MS

Executive Editor – Mark Blumenthal

Managing Editor – Lori Glenn

Consulting Editors – Dennis Awang, PhD, Francis Brinker, Steven Foster, Roberta Lee, MD

Production – Cassandra Johnson, George Solis

AMERICAN
BOTANICAL
COUNCIL

Now in Our
20th Year

FILE: ■ Indian Frankincense (*Boswellia serrata*)

■ Valdecoxib

■ Osteoarthritis

HC 050676-345

Date: January 31, 2008

RE: Indian Frankincense Extract Found to Effectively Treat Knee Osteoarthritis

Sontakke S, Thawani V, Pimpalkhute S, Kabra P, Babhulkar S, Hingorani L. Open, randomized, controlled clinical trial of *Boswellia serrata* extract as compared to valdecoxib in osteoarthritis of knee. *Indian J Pharmacol*. Feb 2007; 39(1): 27-29.

Indian frankincense (*Boswellia serrata*) has a long history of use in Ayurvedic medicine in India. The herb is known as *Gaja-bhaksha* in Sanskrit and *Sallaki Guggul* in Ayurveda. The gum resin of Indian frankincense has anti-inflammatory, anti-arthritic, and analgesic effects. A double-blind, randomized clinical trial has reported that Indian frankincense is more effective than placebo in treating the symptoms of osteoarthritis (OA).¹ This comparative clinical trial was designed to evaluate the efficacy and safety of Indian frankincense in treating OA of the knee with valdecoxib. Valdecoxib (Bextra) was a popular new osteoarthritis drug in the United States and India at the time of this study. In April 2005, the valdecoxib was banned by the United States Food and Drug Administration due to safety concerns that include severe skin reactions and increased risk for cardiovascular events.²

The authors recruited 66 patients with OA of knee, diagnosed according to American College of Rheumatology criteria, from the Kayachikitsa Government Ayurved College (Nagpur, India) between December 2003 and May 2004. The patients were assessed monthly with the Western Ontario and McMaster Universities OA scale (WOMAC). The WOMAC is a modified visual analogue scale in which patients rate the severity of 3 symptoms, namely, "pain, stiffness, and difficulty in performing physical activity" on a scale of 1 to 100, with 100 being the most severe. The patients were randomized by the SAS system for Windows to received either 333 mg of Indian frankincense extract (CapWoykel™, Pharmanza India, Kansani, India) 3 times daily or 10 mg valdecoxib (Tab Valdone, Cadila Pharmaceuticals Limited, Bhat, India) once daily for 6 months. The patients took both medications orally after meals. Each Indian frankincense extract capsule was standardized to contain a minimum of 40% total boswellic acids.

A total of 8 patients dropped out of the study, including 2 patients from the Indian frankincense group and 6 patients from the valdecoxib group. The reasons cited for dropping out of the Indian frankincense group were diarrhea and abdominal cramps for 1 patient and inadequate control of symptoms for the other. All drop-outs from the valdecoxib group cited recurrence of symptoms after missing 1 or more doses. Rescue medication was required by 7 members of the Indian frankincense group and 6 members of the valdecoxib group. In addition, 3 patients from the Indian frankincense group and 2 from the valdecoxib group experienced stomach acidity that was successfully treated by ranitidine. No severe adverse effects were observed in either group. The WOMAC scores of Indian frankincense group were not significantly different after 1 month of treatment. However, from month 2 to month 6, a significant reduction in symptoms was observed, as indicated by a significant decrease in WOMAC scores when compared to baseline values ($P < 0.001$). This significant decrease in symptoms persisted 1 month after stopping the Indian frankincense treatment. The valdecoxib group experienced a significant reduction in symptoms from month 1 to month 6, as indicated by a significant decrease in WOMAC scores when compared with baseline values ($P < 0.001$). However, the effect did not persist 1 month after treatment was terminated. One month after ending treatment, the WOMAC scores of the Indian frankincense group were significantly lower than those of the valdecoxib group ($P < 0.001$), indicating significantly better control of the symptoms. There were no differences in radiographs of the knee joint between baseline and end of study for either group.

The results indicate that Indian frankincense extract effectively treats the symptoms of knee OA. Compared with valdecoxib, Indian frankincense extract has both a slower onset of action (1 month) and a longer duration of effect after cessation of treatment. The mechanism of action for this effect may involve a reduction of the damage caused by OA through prevention of the degradation of articular cartilage. This may explain the persistence of the Indian frankincense extract's effect 1 month after the end of treatment. The authors report that, after the end of this study, valdecoxib was banned in India for safety concerns. They conclude that Indian frankincense extract is superior to valdecoxib in the treatment OA symptoms, with the exception of its slower onset of action.

—Marissa Oppel, MS

References

1. Kimmatkar N, Thawani V, Hingorani L, Khiyani R. Efficacy and tolerability of *Boswellia serrata* extract in treatment of osteoarthritis of knee--a randomized double blind placebo controlled trial. *Phytomed*. Jan 2003;10(1):3-7.
2. Valdecoxib. MedlinePlus. May 21, 2007.
<http://www.nlm.nih.gov/medlineplus/druginfo/medmaster/a602011.html>

The American Botanical Council has chosen not to reprint the original article due to lack of response from the publisher.

The American Botanical Council provides this review as an educational service. By providing this service, ABC does not warrant that the data is accurate and correct, nor does distribution of the article constitute any endorsement of the information contained or of the views of the authors.

ABC does not authorize the copying or use of the original articles. Reproduction of the reviews is allowed on a limited basis for students, colleagues, employees and/or members. Other uses and distribution require prior approval from ABC.