ALTERNATIVE MEDICINE

AN EVIDENCE-BASED APPROACH

Cat's Claw for Arthritis

History and Rationale for Use

In the medicinal system of the Ashaninka Indians of Peru, the human being is made up of body and spirit—flesh (ivatsa) and "deepest being" (isancane). As with many traditional systems, health is considered to be a state of harmony, with the literal translation of the phrase "I am healthy (nocaratanaje)" being "I carry harmony," according to Klaus Keplinger, who studied the Ashaninka during nine trips to the Amazon rain forest (J. Ethnopharmacol. 1999;64:23-34).

► Peruvian Indians have long used preparations made from the cat's claw vine to treat various maladies.

► Two small clinical studies have suggested that the herb may have benefits in patients with rheumatoid arthritis or osteoarthritis.

According to the Ashaninka, disruptions in communication between body and spirit are a result of anxiety, and preparations of powerful plants (*saventaro*) that are inhabited by good spirits can eliminate these disruptions and restore health and harmony. One of these plants is *Uncaria tomentosa,* or uña de gato (cat's claw), so called because of its distinctive curling hooks. A decoction of sliced root bark boiled in water is used in traditional Peruvian medicine to treat numerous inflammatory disorders, ulcers, and infections.

Mechanisms of Action

Various hypotheses have been proposed to account for the purported clinical effects of cat's claw. One group of investigators has reported that the most likely mechanism for cat's claw's effects is immunomodulation via suppression of tumor necrosis factor–α (TNF-α) synthesis. The in vitro suppression ranges from 65% to 85%, which they described as "not a drawback," because "complete inhibition of TNF-α and other inflammatory/immune mediators may result in a dangerous state of immune suppression, leaving the host vulnerable to invading microorganisms and tumor development. This fear [has been] borne out with anti-TNF-α therapy where the incidence of lymphomas is increasing" (Free Radic. Biol. Med. 2000;29:71-8).

Another group of researchers recently proposed that cat's claw's effects also derive from enhancement of DNA repair and immune cell responses through regulation of the nuclear transcription factor–β (NF-β), which controls nuclear events that protect the cell from apoptosis and also controls proinflammatory cytokine production (J. Ethnopharmacol. 2005;96:577-84).

In vitro studies also have identified free radical scavenging activity and inhibition of prostaglandin E_2 (PGE_2) production.

The active principles thought to be responsible for these effects are pentacyclic oxindole alkaloids (POA). Two chemotypes of *U. tomentosa* exist; only the POA chemotype is immunomodulating. The second chemotype contains tetracyclic oxindole alkaloids that inhibit the immunomodulating effects (Planta Med. 1998;64:701-4).

Clinical Studies

A double-blind trial of an extract from *U. tomentosa* (Krallendorn capsules, made by Immodal Pharmaka GmbH, Volders, Austria) was recently conducted among a group of 40 patients with rheumatoid arthritis being treated at Innsbruck (Austria) University Hospital.

All patients had active disease and had been treated with sulfasalazine or hydroxychloroquine for at least 6 months. Nonsteroidal anti-inflammatory drugs and prednisolone up to 10 mg/day were permitted during the study.

Patients were randomized to receive one capsule (20 mg) of the plant extract or placebo three times per day for 24 weeks. During the next 24 weeks, all patients received the plant extract.

At the end of the first phase of the study, the number of painful joints had decreased by 53.2% in the active-extract group, compared with 24.1% in the placebo group (J. Rheumatol. 2002;29:678-81). Significant differences also were seen in the number of tender joints and duration of morning stiffness in the treatment group, but not in the placebo group, at 24 weeks compared with baseline.

No changes were seen in other parameters of efficacy, including patient assessment of disease activity, subjective assessment of pain, and laboratory markers, except for an increase in rheumatoid factor in the placebo group.

By the end of the second phase of the study, further significant improvements in the number of tender joints and duration of morning stiffness were seen among patients initially randomized to the extract group. Patients initially randomized to placebo also experienced significant improvements in the number of painful and swollen joints once they were switched to the active extract. These patients also reported decreased pain intensity, disease activity, and duration of morning stiffness, although these differences did not reach statistical significance. There was a nonsignificant decrease in rheumatoid factor in this group.

One patient in the extract group withdrew because of gastritis, and one patient in the placebo group withdrew because of diarrhea. No serious side effects were reported.

Cat's claw has also been evaluated for use in knee osteoarthritis. In a multicenter double-blind study, 45 men were randomized to receive 100 mg of freeze-dried cat's claw or placebo daily for 4 weeks. The cat's claw group experienced significant improvements in pain associated with activity and in patient and physician assessment of disease activity. Improvements were seen as early as week 1 and continued throughout the trial (Inflamm. Res. 2001;50:442-8).

The authors observed a reduction in PGE_2 production, which they attributed to an inhibition of cyclooxygenase-2 expression. They wrote, "Of particular interest in the treatment of arthritis is the ability of cat's claw to not only confer benefit to the joints but also negate the side effects of NSAIDs on the stomach and intestine. … This Amazonian botanical not only treats the arthritic disease process but also reduces the toxic side effects of the current standard pharmaceuticals used in the management of arthritis. The concept that botanicals can be used to reduce the toxicity of pharmaceuticals is an intriguing and greatly underexplored area of investigation."

—Nancy Walsh

Local Injections Help Delay Spinal Surgery

BY ALICIA AULT
Contributing Writer

WASHINGTON — Local anesthetic injected into the lumbar spine, either alone or with a steroid, may help patients avoid surgery for as long as 5 years, according to a study presented by K. Daniel Riew, M.D., and colleagues at the annual meeting of the American Academy of Orthopaedic Surgeons.

The study was a follow-up of a trial they published in the Journal of Bone and Joint Surgery in 2000, in which 55 candidates for surgery were randomly assigned instead to a selective nerve root injection of either bupivacaine alone or bupivacaine and betamethasone. Neither the physician nor the patient knew which was being injected.

At that time, 29 of the 55 patients avoided surgery. Dr. Riew, a professor of orthopedic surgery at Washington University in St. Louis, and his colleagues contacted these patients 5 years post injection, and 21 responded.

Of the 21 who responded, 9 patients had been injected with only the local anesthetic; of those patients, 8 had avoided surgery during the intervening years. Twelve of the patients who responded had received the anesthetic plus steroid, and 9 of those 12 had avoided surgery in the intervening years.

There was no significant difference in surgery avoidance between the patients who had the local anesthetic alone and those receiving the bupivacaine with betamethasone. Dr. Riew said the bupivacaine alone may have had a placebo effect. But, he added, the original nerve root irritation could have healed on its own.

Among the 21 responding patients, 14 had spinal stenosis and 7 had a herniated disc as the initial diagnosis. There seemed to be no difference in outcomes between the two groups.

All the patients had significant decreases in symptoms and back pain at 5-year follow-up. Dr. Riew recommended that patients with nerve root pain who are without significant neurologic symptoms be offered nerve root blocks before surgical intervention. ■

Early Response Key With Botox Injections for Low Back Pain

PALM SPRINGS, CALIF. — Patients with low back pain who experience significant improvement in pain and function after one set of botulinum toxin type A injections are highly likely to respond to subsequent treatments, Bahman Jabbari, M.D., reported at the annual meeting of the American Academy of Pain Medicine.

Those who do not obtain relief within about 2 weeks of an initial series of injections are significantly less likely to respond to subsequent treatments, said Dr. Jabbari, professor of neurology at Yale University, New Haven.

A prospective study of 75 adults with chronic, refractory low back pain was undertaken by Dr. Jabbari and his associates at Walter Reed Army Medical Center, Washington.

Botulinum toxin type A (Botox, 100 U/cc) was injected into paraspinal muscles at three to five horizontal levels (50 U/site) on each side as close as possible to the tender points, said Dr. Jabbari, who presented the data in poster form. The mean dose per session was 285 U, with a range of 200-450 U, depending on the patient extension and laterality.

Patients received neurologic examinations and were administered a visual analog pain assessment, Oswestry Low Back Pain Questionnaire, and the Pain Impact Questionnaire at baseline, 3 weeks, and 2, 4, 6, 8, 10, 12, and 14 months after the initial treatment. They could request subsequent Botox injections when pain recurred, usually at 4, 8, and 12 months. Pain medications and physical therapy were not adjusted during the study.

Significant pain relief and improvement in function were noted by 42 of 75 patients at 3 weeks and 40 of 75 patients at 2 months. Of these patients, 90% continued to respond to subsequent treatments. Those who did not obtain initial relief were unlikely to respond during future treatments.

No serious adverse events were reported. Two patients experienced a transient flu-like reaction, and another described acute root pain for 60 seconds after being injected.

Age, pain intensity, pain duration, laterality, and a history of previous surgery all failed to correlate with whether a patient responded or failed to improve with Botox.

He noted that patients who respond generally begin to notice improvement within 3-4 days of an initial injection session. Relief typically peaks at about 10 days to 2 weeks and generally lasts about 4 months.

Allergan Inc. provided funding for the study.

—Betsy Bates