AMERICAN HEALTH CONSULTANTS®

HOLISTIC NURSING UPDATE™

A Guide to Complementary and Alternative Therapies

American Health Consultants Home Page—http://www.ahcpub.com

CE for Nurses—http://www.ce-web.com

St. John's Wort and Depression

By Gail Mornhinweg, PhD, ARNP, CS

THE FINANCIAL IMPACT OF DEPRESSION, INCLUDING TREATMENT, DISability, and lost productivity, has been estimated at $44 billion per year in the United States alone; worldwide, depression is the leading cause of disability.[1]

St. John's wort (SJW) is the most widely used antidepressant in Germany[1] and, according to the American Botanical Council, 1998 sales in the United States totaled more than $140 million, nearly a 190% increase over 1997 sales.[2] Its over-the-counter availability and relatively low cost afford some relief to a large number of people with little or no health care.

Background and Historical Usage

St. John's wort (*Hypericum perforatum*) has a very long and colorful history. Ancient Greeks believed that SJW had supernatural powers and its fragrance would cause evil spirits to fly away. Romans burned its leaves and flowers on Midsummer Day to rid evil spirits. The plant was later dedicated to the world of Christianity when it was recognized that it bloomed close to John the Baptist's birthday (June 24).

SJW belongs to the Hypericaceae family and originated in Europe, Western Asia, and North Africa. SJW is an erect and bushy perennial herb that grows best in a sunny location in dry or chalky soil. The flowers have five, small yellow petals with tiny dots of reddish brown pigment. Of the more than 370 *Hypericum* species in the world, 25 are found in North America. The most commonly used parts are the leaves and flowering tops gathered during the blooming season.

SJW has been used in Europe for centuries to treat gastritis, wounds, kidney and lung problems, and insomnia. Today, SJW is most commonly used to treat symptoms of mild-to-moderate

Volume 1 • Number 5 • May 2000 • Pages 33-40

INSIDE

depression, anxiety, sleep disorders, and seasonal affective disorder.[3-6] Other uses include neuralgia, sciatica, and indigestion. In topical form SJW promotes healing of wounds and burns and acts as an anti-inflammatory agent. Extracts have shown broad antibiotic activity against *E. coli* and *S. aureus*.[7]

Chemical Constituents

Chemical constituents of *H. perforatum* include hypericin, pseudohypericin, flavonoids, xanthones, phenolic carboxylic acid, essential oils, carotenoids, hyperforin, alkanes, phloroglucinol derivatives, phytosterols, and medium chain fatty acids.

Mechanism of Action

The mechanism of action for SJW's antidepressant effects is still largely unknown. Some studies cite monoamine oxidase inhabitation (in vitro studies); others indicate the stimulation of γ-aminobutyric acid (GABA) binding and synaptic uptake.[8] The inhibition of serotonin reuptake also has been studied in vitro.[9] Others indicate the downregulation of B-adrenoceptors,[10] increased endorphin levels,[11] and inhibition of benzodiazepine receptors.[12]

Others believe the flavonoids xanthone and quercetin may contribute to the effects in noradrenalin and serotonin metabolism.[13] More recent studies indicate that hyperforin is the active agent responsible for SJW's antidepressant effects.[8]

Clinical Research

Much of the data regarding the efficacy of SJW comes from a meta-analysis of 23 European studies.[14] The results of this meta-analysis showed that the herb was more effective in treating depression than placebo and as effective as conventional tricyclic agents. A follow-up analysis of 27 studies published in 1997 demonstrated that there was no difference in response rates of individuals taking SJW compared to those taking antidepressants.[15] Both analyses also indicated significantly fewer side effects with SJW use.

Because of its growing popularity and the results of previous trials, the National Institutes of Health has sponsored a three-year clinical study of SJW and its ability to treat major depression.[1] Patients in this study will be randomized to receive 900 mg/d SJW, placebo, or a selective serotonin reuptake inhibitor (SSRI) for eight weeks. Subjects will be assessed with standard psychiatric evaluation tools and those who respond to treatment will receive 18 weeks of follow-up treatment.

Safety

SJW is considered safe when taken orally for medicinal purposes on a short-term basis. It is unsafe during pregnancy due to potential uterotonic effects and should not be used during lactation because of insufficient reliable information.[16] There have been no scientifically reported deaths caused by SJW.[16]

Adverse Effects

Increased photosensitivity, manifested in itching and erythematous lesions, is possible in fair-skinned individuals taking large doses for extended periods of time; an SPF 15 sunscreen should be used by patients taking SJW.[17] It is also recommended that patients taking SJW avoid tanning beds and sunlamps.

Other reports indicate mild abdominal discomfort, nausea, vomiting, dizziness, dry mouth, skin irritation, insomnia, elevated blood pressure, and unusual fatigue. There have been no reports of impaired driving or problems operating machinery associated with SJW use.[18]

Interactions

SJW may interact with L-dopa and 5-hydroxytryptophan. Concomitant use with other antidepressants increases the risk of serotonin syndrome and should be avoided.[16]

A recent study suggests an interaction between SJW and cyclosporin, indinavir, and other antiretrovirals.[16,19,20] New information also indicates that hypericum extracts activate the P450 system, increasing elimination of some drugs from the body. SJW also may

Holistic Nursing Update is published monthly by American Health Consultants, 3525 Piedmont Rd., NE, Bldg. 6, Suite 400, Atlanta, GA 30305.

PUBLISHER: Brenda L. Mooney.

EDITORIAL GROUP HEAD: Leslie G. Coplin.

ASSOCIATE MANAGING EDITOR: Paula L. Cousins.

GST Registration Number: R128870672.

Periodical postage pending at Atlanta, GA.

POSTMASTER: Send address changes to ***Holistic Nursing Update,*** P.O. Box 740059, Atlanta, GA 30374.

Subscriber Information

Customer Service: 1-800-688-2421.

Customer Service E-Mail Address: customerservice@ahcpub.com

Editorial E-Mail Address: paula.cousins@medec.com

World-Wide Web: http://www.ahcpub.com

Subscription Prices

United States

$199 per year (Student/Resident rate: $99).

Outside the United States

$229 per year plus GST (Student/Resident rate: $119 plus GST).

Back Issues

$33 per issue. Missing issues will be fulfilled by Customer Service free of charge when contacted within one month of the missing issue's date.

For CE credit, add $50.

For details on our CE program, contact: Customer Service, American Health Consultants, P.O. Box 740056, Atlanta, GA 30374. Phone: (800) 688-2421; fax: (800) 284-3291.

Accreditation

American Health Consultants is accredited as a provider of continuing education in nursing by the American Nurses Credentialing Center's Commission on Accreditation. Provider approved by the California Board of Registered Nursing. Provider Number CEP 10864, for approximately 12 contact hours.

Questions & Comments

Please call **Paula Cousins,** Associate Managing Editor at (816) 960-3730 between 8:30 a.m. and 4:30 p.m. ET, Monday-Friday.

interact with other drugs metabolized by the P450 system, including calcium channel blockers, chemotherapeutic agents, antifungals, glucocorticoids, cisapride, losartan, fluoxetine, omeprazole, and fexofenadine.[16,18,21]

Concomitant use with other sedative herbs may enhance therapeutic and adverse effects.[16] These sedative herbs include, but are not limited to, calendula, California poppy, catnip, capsicum, ginseng, German chamomile, goldenseal, hops, lemon balm, sage, skullcap, passionflower, stinging nettle, and valerian.

Although there have been no reports of interactions with tyramine-containing foods and large doses would most likely be required to produce an effect, the concern is often raised.[16]

Formulation and Dosage

SJW is available as a dried herb, liquid extract, tincture, infused oil, and as a tea. For mild-to-moderate depression, the most commonly prescribed oral dose is 900 mg/d standardized extract, dosed at 300 mg tid. Most products are standardized to 0.03% hypericin content; however, more recent studies indicate the use of hyperforin at 4-5%.[8] The standardized dosage of hyperforin is 30-45 mg/d in divided doses.[6] The Commission E monograph suggests an average daily dose of 2-4 g.[22] It is suggested that treatment continue for at least four to six weeks to assess effectiveness. If symptoms do not improve by week 6 then a change is warranted.

Conclusion

In comparing the retail price of a month's supply of conventional antidepressants (approximately $60) to the cost of SJW (approximately $15-30), SJW may represent a much more reasonable option for many patients. (*For detailed pricing information, see Table 1.*) It is a promising alternative to allopathic antidepressants, particularly for those who can not tolerate standard medicinals. Although the product is readily available, health care providers and patients need to be aware that there are other causes for the symptoms of depression, including thyroid disease and anemia. If symptoms are not alleviated, professional health care should be sought. ❖

Dr. Mornhinweg is an Adult Nurse Practitioner at the Choice to Heal Clinic in Floyds Knobs, IN.

References

1. St. John's wort study launched. Available at: http://www.nih.gov/news/pr/oct97/nimh-10.htm. Accessed April 10, 2000.
2. Blumenthal M. Herb market levels after five years of boom. *HerbalGram* 1999;47:64-65.
3. Kasper S. Treatment of seasonal affective disorder (SAD) with hypericum extract. *Pharmacopsychiatry* 1997;30(suppl 2):S89-S93.
4. Martinez B, et al. Hypericum in the treatment of seasonal affective disorders. *J Ger Psychiatry Neurol* 1994;7(suppl 1):S29-S33.
5. Upton R. St. John's Wort Monograph. In: Upton R, ed. *American Herbal Pharmacopoeia and Therapeutic Compendium*. Santa Cruz, CA: American Herbal Pharmacopoeia; 1997.
6. St. John's Wort Monograph. *AltMedDex*. Engelwood, CO: MICROMEDEX; 1999.
7. Bombardelli E, Morazzoni P. *Hypericum perforatum*.

Table 1

Cost comparison: St. John's wort vs. conventional antidepressants

Product Name	Generic/Latin Name	Dosage	Standardized	30-Day Supply
Paxil®	paroxetine	10 mg/d	n/a	$59.59
Prozac®	fluoxetine	10 mg/d	n/a	$67.20
Zoloft®	sertraline	10 mg/d	n/a	$59.19
Kira Standardized Hypericum St. John's Wort Extract	*Hypericum perforatum*	300 mg tid	3% hypericin	$29.98
Movana™ Advanced St. John's Wort	*Hypericum perforatum*	300 mg tid	3% hyperforin	$24.98
Natrol St. John's Wort	*Hypericum perforatum*	300 mg tid	3% hypericin	$13.77
Nature's Way St. John's Wort	*Hypericum perforatum*	300 mg tid	3% hypericin	$14.99

Source: http://www.drugstore.com

Fitoterapia 1995;66:43-68.

8. Chatterjee S, et al. Hyperforin as a possible antidepressant component of hypericum extracts. *Life Sci* 1998;63:499-510.
9. Mueller W, et al. Effects of St. John's wort extract, LI-160, on neurotransmitter uptake systems and adrenergic receptor density. Paper presented at the Second International Congress on Phytomedicine. Munich, Germany; 1996.
10. Miller AL. St. John's wort (*Hypericum perforatum*): Clinical effects on depression and other conditions. *Altern Med Rev* 1998;3:18-26.
11. Landis R, Khalsa PSK. *Herbal Defense: Positioning Yourself to Triumph Over Illness and Aging.* New York: Warner Books; 1997.
12. Wong AH, et al. Herbal remedies in psychiatric practice. *Arch Gen Psychiatry* 1998;55:1033-1044.
13. Cott JM. In vitro receptor binding and enzyme inhibition by *Hypericum perforatum* extract. *Pharmacopsychiatry* 1997;30(suppl 2):108-112.
14. Linde K, et al. St John's wort for depression—an overview and meta-analysis of randomised trials. *BMJ* 1996;313:253-258.
15. Linde K, Mulrow CD. St. John's wort for depression. Cochrane Review. In: The Cochrane Library. Oxford: Update Software. July 9, 1998.
16. *Natural Medicines Comprehensive Database* [online version]. Stockton CA: Therapeutic Research Center Inc.; 2000.
17. Brockmoller J, et al. Hypericin and pseudohypericin: Pharmacokinetics and effects on photosensitivity in humans. *Pharmacopsychiatry* 1997;30:94-101.
18. Woelk H, et al. Benefits and risks of hypericum extract LI 160: Drug monitoring study with 3,250 patients. *J Geriatr Psychiatr Neurol* 1994;7(Suppl 1):S34-S38.
19. Piscitelli SC, et al. Indinavir concentrations and St. John's wort. *Lancet* 2000;355:547-548.
20. NIH clinical center study demonstrates dangerous interaction between St. John's wort and an HIV protease inhibitor. Available at: http://www.nih.gov/news/pr/feb2000/wgmce-10.htm. Accessed April 10, 2000.
21. Risk of drug interactions with St. John's wort and indinavir and other drugs. Available at: http://www.fda.gov/cder/drug/advisory/stjwort.htm. Accessed April 10, 2000.
22. Blumenthal M. *The Complete German Commission E Monographs. Therapeutic Guide to Herbal Medicines.* Austin, TX: American Botanical Council; 1998.

Lavender Aromatherapy for Chronic Pain

By Jane Buckle, RN, MA

CHRONIC PAIN COSTS THE U.S. ECONOMY APPROXIMATELY $70 billion annually and affects nearly 80 million Americans.[1] During the last five years there has been a 2,700% increase in the numbers of social security disability claims paid for chronic back pain[2] and the emergence of specialized pain clinics.[3] Pain is one of the most common symptoms in clinical settings and is one of the main reasons patients seek alternatives.[4]

With symptoms that include anxiety, depression, irritability, insomnia, loss of appetite, and immobility, chronic pain is a complex emotional, social, and physical dysfunction.[5] Conventional treatment for chronic pain generally includes a mixture of opioid and non-opioid drugs. There is evidence that tricyclics or benzodiazepines (more commonly known for their antidepressant properties) inhibit the action of nociceptor neurotransmitters.[6] These drugs are used as analgesics (at doses less than those given for depression) and are particularly relevant in the treatment of neuropathic pain.

Recently, aromatherapy has emerged as part of an integrated, multidisciplinary approach to pain management. Aromatherapy is thought to enhance the parasympathetic response through the effects of touch and smell,[7] and to encourage deep relaxation which has been shown to alter perceptions of pain.[8] Several State Nursing Boards now accept aromatherapy as part of holistic nursing care.[9]

Definitions

Aromatherapy is the controlled, therapeutic use of essential oils.[7] When essential oils are used by nurses for therapeutic purposes, aromatherapy becomes clinical.[10] Clinical aromatherapy requires significant training. Nurses wishing to use essential oils clinically should be conversant with potential drug interactions and contraindications before they begin using aromatherapy with patients. For example, there are three different species of lavender: One is a sedative, one is a stimulant, and the other can be neurotoxic in large doses but is effective against pseudomonas.[11] Inhaled *Lavandula angustifolia* (true lavender) has calming effects that are comparable to diazepam;[12] it can potentiate the use of hypnotics;[13] and used topically (1-5% dilution), it can enhance healing in burns and wounds.[14] Clinical aromatherapy is common practice among nurses in many

parts of the world, including the United Kingdom, Australia, South Africa, Germany, and Switzerland.[15]

Only pure essential oils are used in aromatherapy. (*See Table 1 for the different methods of administration.*) Essential oils are the "volatile, organic constituents of fragrant plant matter"[16] (in this context, volatile means evaporates easily). Essential oils should be 100% pure and are up to 100 times more highly concentrated than the plant. Allergic reactions to the pure essential oils used in aromatherapy are uncommon; however, using essential oils that are not pure may cause adverse effects due to the contaminant.

Mechanism of Action

Essential oils are highly complex and are made up of many different chemical components, or molecules. These molecules travel via the nose to the olfactory bulb and on to the limbic system of the brain, an inner complex ring of brain structures below the cerebral cortex, arranged into 53 regions and 35 associated tracts.[17]

Both touch and smell affect the parasympathetic nervous system and can have instant effects at physical, psychological, and molecular levels.[18] The analgesic effects of aromatherapy are thought to be caused by several factors:[7]

- The effect of a complex mixture of volatile chemicals on the pleasure memory sites within the brain
- The effects of certain analgesic components within the essential oil on the neurotransmitters dopamine, serotonin, and noradrenaline at receptor sites in the brain stem
- The interaction of touch with sensory fibers in the skin and the transmission of referred pain
- The rubefacient effect of baths or friction on the skin

Within the brain, the amygdala and the hippocampus are of particular importance in the processing of aromas. *Lavandula angustifolia* (true lavender) is a common essential oil used topically to relieve pain and also appears to enhance the effect of conventional pain medication.[19,20] The physiological response to lavender has been "mapped" with a computerized topographical EEG.[21] Like diazepam (Valium®), *Lavandula angustifolia* is thought to reduce the effect of external emotional stimuli by increasing γ-aminobutyric acid (GABA)-containing inhibitory neurons in the amygdala.[10] This is interesting as tricyclics and benzodiazepines, which are commonly used by conventional medicine to treat chronic pain, also inhibit the action of nocioceptor neurotransmitters.[6]

Table 1

Aromatherapy: Methods of administration

Inhalation: Useful for depression, insomnia, sinusitis, upper respiratory tract infection. Inhale directly from tissue or float two drops on steaming bowl of water.

Topical: Useful for pain, contusions, skin complaints, muscle strain, and scar tissue. Compresses, baths, and massage.

Vaginal: Useful for yeast infections or cystitis. Use diluted in carrier oil on tampon. Only use essential oils high in alcohols, such as tea tree.

Clinical Studies

In a study of 20 hospitalized children with HIV (aged three months and older), nurses used aromatherapy to provide comfort and pain relief.[22] This was a descriptive study and no method of measuring pain was given; however, the nurses reported less discomfort in children who had spasm due to encephalopathy, resulting in decreased analgesic use. Chronic chest pain (that had been unresponsive to regular analgesia) was eased and painful peripheral neuropathy was alleviated almost completely. The nurses found the following essential oils useful: true lavender (*Lavandula angustifolia*); Roman chamomile (*Chamaemelum nobile*); neroli (*Citrus aurantium*); mandarin (*Citrus reticulata*); sandalwood (*Santalum album*); and palma rosa (*Cymbopogon martinii*).

A study using lavender (*Lavandula angustifolia*) cites a 50% reduction in pain perception as recorded by patients in a critical care setting.[23] Thirty-six patients were divided into three groups of 12: One group received massage plus lavender (Group A), one group received massage without lavender (Group B), and the control group received no treatment. Treatment consisted of a 20-minute foot massage twice a week for five weeks. The study was not randomized or blinded as smell and touch are impossible to hide.

Investigators completed questionnaires documenting pain, wakefulness, heart rate, and systolic blood pressure, which limited the validity of the study. Observations were taken before and immediately following the intervention and up to half an hour later. This was an interesting study as 50% of the patients were artificially ventilated and, therefore, the effects of the essential oil could not be from inhalation. The most striking difference between Group A and Group B was in the effect upon heart rate. Among Group A patients, 90% showed a reduction of 11-15 beats/min whereas only 58% of Group B showed any reduction, and it was consistently less. Only 41% of the control group showed any reduction. The study gives no formal statistics or analysis.

Brownfield studied the effects of aromatherapy and massage on nine inpatients with rheumatoid arthritis (RA) in a quasi-experimental design.[24] This randomized, controlled study used a visual analog scale as the measurement tool. Intervention was a 10-minute upper neck and shoulder massage, with or without *Lavandula angustifolia*, carried out on two consecutive evenings. Inclusion criteria were diagnosis of RA in accordance with the American Rheumatism Association, 18 years of age or older, and disease duration more than two years.

Quantitative results did not reveal any reduction in pain levels following massage with or without lavender. However, the interviews showed that those patients receiving massage with lavender oil were able to reduce their intake of analgesia. The author concludes that the apparent contradictory findings could be because many patients with RA "have difficulty distinguishing pain from stiffness." Patients also reported that they slept better or were able to roll over in bed and six patients expressed a desire to continue aromatherapy treatment. This study is limited because of the small patient population and the possibility that researchers may have biased subjects to approve of the treatment. However, it does highlight that idea that perception plays an important role in pain and that this perception can be affected by touch and smell.

Conclusion

It is not yet known whether aromatherapy achieves its clinical efficacy as a result of the placebo response, the effect of touch and smell on the parasympathetic nervous system, the learned memory of aroma, the pharmacokinetic potentiation of orthodox drugs by essential oils, or because the pharmacologically active ingredients within the essential oils have analgesic effects. Although future clinical studies are needed to precisely determine the effects of aromatherapy, these studies suggest that aromatherapy may play a role in chronic pain relief. ❖

Ms. Buckle is an adjunct faculty member in the holistic nursing department at The College of New Rochelle, New Rochelle, NY, and in the department of botanical medicine, psychology, and spirituality at Bastyr University, Seattle, WA.

References

1. Berman BM, Sawyers JP. Establishing a research agenda for investigating alternative medical interventions for chronic pain. *Primary Care* 1997;24:743-758.
2. Hanson RW, Gerber KE. *Coping With Chronic Pain*. New York: Guildford Press; 1990.
3. Pennisi E. Racked with pain. *New Scientist*. March 9, 1996;27-29.
4. Bullock M, et al. Characteristics and complaints of patients seeking therapy at a hospital-based alternative medicine clinic. *J Altern Compl Med* 1997;3:31-37.
5. Mackensie A. Care of the person with chronic health problems. In: Hinchcliffe S, et al, eds. *Nursing Practice and Health Care*. 2nd ed. London: Arnold; 1993.
6. Fields H. Pain: Anatomy and physiology. *J Altern Compl Med* 1997;3(suppl):S41-S46.
7. Buckle J. Use of Aromatherapy as a complementary therapy for chronic pain. *Altern Ther Health Med* 1999;5:42-53.
8. Turner JA, Jensen MP. Efficacy of cognitive therapy for chronic low back pain. *Pain* 1997;52:169-177.
9. Lindberg B. Advisory Ruling: Board of Registration in Nursing. Boston, MA: The Commonwealth of Massachusetts Division of Registration; September 10, 1997.
10. Welsh C. Complementary therapies in hospice care: Touch with oils—a pertinent part of holistic hospice care. *Am J Hospice Pall Care* 1997;Jan/Feb:42-44.
11. Buckle J. *Clinical Aromatherapy in Nursing*. London: Arnold; 1997.
12. Franchomme P, Penoel D. *Aromatherapie Exactement*. Limoge, France: Jollois Publishing; 1981.
13. Tisserand R. Aromatherapy today. Part 1. *Int J Aromatherapy* 1993;5:26-29.
14. Guillemain J, et al. Neurodepressive effects of the essential oil of *Lavandula angustifolia* Mill [in French]. *Ann Pharm Fr* 1989;47:337-343.
15. Valnet J. *The Practice of Aromatherapy*. Rochester, VT: Healing Arts; 1990.
16. Price S, et al. *Aromatherapy for Health Professionals*. London: Churchill Livingstone; 1995.
17. Watts GO. *Dynamic Neuroscience, Its Application to Brain Disorders*. New York: Harper & Row; 1975.
18. Ledoux J. *The Emotional Brain*. New York: Simon & Schuster; 1996.
19. Atanossova-Shopova S, et al. On certain central neurotropic effects of lavender essential oils. *Bulletin of the Institute of Physiology* (Bulgarian Academy of Sciences XV) 1973;13:69-77.
20. Waldman C, et al. Aromatherapy in the intensive care unit. *Care of Critically Ill* 1993;9:170-174.
21. Klemm W, et al. Topographical EEG maps of human responses to odors. *Chemical Senses* 1992;17:347-361.
22. Styles JL. The use of aromatherapy in hospitalized children with HIV disease. *Compl Ther Nurs Midwifery* 1997;3:16-20.

23. Woolfson A, Hewitt D. Intensive aromacare. *Int J Aromatherapy* 1992;4:12-14.
24. Brownfield A. Aromatherapy in arthritis—a study. *Nurs Stand* 1998;13:34-35.

CE Objectives

After reading this issue of *Holistic Nursing Update*, the continuing education participant should be able to:

1. Converse in a scholarly manner about issues germane to holistic nursing.
2. Apply the principles of holistic philosophy and practice to clinical settings.
3. Discuss why some alternative and complementary therapies are used and why others are rejected.
4. Validate the effectiveness of holistic care and modalities through generation of research ideas.

Focus on Organizations

National Association for Holistic Aromatherapy (NAHA)

NAHA is an educational, non-profit organization, dedicated to improving public awareness of aromatherapy and elevating the standards of aromatherapy education and practice.

National Association for Holistic Aromatherapy
P.O. Box 17622
Boulder, CO 80308
phone: (888) ASK-NAHA, or (206) 256-0741
fax: (206) 770-5915
e-mail: info@naha.org

Aromatherapy for Health Professionals

Aromatherapy for Health Professionals offers training and certification courses in clinical aromatherapy for licensed health professionals.

R.J. Buckle Associates, LLC
P.O. Box 868
Hunter, NY 12442
phone: (518) 263-4402
e-mail: janebuckle001@aol.com
website: http://www.rjbuckle.com

Clinical Reviews

With Comments from Lynn Keegan, RN, PhD, HNC, FAAN

Magnet Therapy for the Treatment of Chronic Low Back Pain

Source: Collacott EA, et al. Bipolar permanent magnets for the treatment of chronic low back pain: A pilot study. *JAMA* 2000;283:1322-1325.

Context: Low back pain is one of the most frequent and expensive medical conditions in the United States. It is estimated that 85% of people will complain of low back pain during their lifetime, and currently more than 5 million people are disabled with this condition.

Objective: To compare the effectiveness of one type of therapeutic magnet, a bipolar permanent magnet, with a matching placebo device for patients with chronic low back pain.

Subjects: Nineteen men and one woman with stable low back pain, a mean of 19 years duration, and no past use of magnet therapy for the condition.

Design and Setting: Randomized, double-blind, placebo-controlled, crossover pilot study conducted from February 1998 to May 1999 in a Veterans Affairs Hospital ambulatory care physical medicine and rehabilitation clinic.

Interventions: For each patient, real and sham bipolar permanent magnets (300 gauss) were applied on alternate weeks for six hours per day, three days per week for one week with a one-week washout period between the two treatment weeks. The magnets were held into place with an abdominal binder, connected via velcro straps.

Main Outcome Measures: Pretreatment and post-treatment pain intensity on a visual analog scale (VAS); sensory and affective components of pain on the Pain Rating Index (PRI) of the McGill Pain Questionnaire; and range of motion measurements (ROM) of the lumbosacral spine, compared by real vs. sham treatment.

Results: Mean VAS scores declined by 0.49 (SD, 0.96) points for real magnet treatment and by 0.44 (SD, 1.4) points for sham treatment (P = 0.90). No statistically significant differences were noted in the effect between real and sham magnets with any of the other outcome measures (ROM, P = 0.66; PRI, P = 0.55).

Conclusion: Application of one variety

of permanent magnet had no effect on this small group of subjects with chronic low back pain.

Comment: The public demand for magnetic devices to treat painful conditions is booming—people in North America spent about $200 million last year and international sales exceeded $5 billion. Magnets have been used to relieve pain since antiquity in locales from Greece to China, but only recently have scientists begun to test how well they really work. In this pilot study with a sample of 20, magnets had no effect on chronic low back pain. What we need to remember is that this was a small study, and that other studies with different populations and conditions are showing different results. It's probably too soon to make any generalizations regarding the overall effectiveness of magnet therapy. ❖

Magnet Therapy for the Treatment of Diabetic Peripheral Neuropathy

Source: Weintraub MI. Magnetic biostimulation in painful diabetic peripheral neuropathy: A novel intervention. *Am J Pain Management* 1999;9:8-17.

Context: The pathophysiology of diabetic peripheral neuropathy (DPN) is complex and poorly understood. Typically, it begins insidiously, producing symptoms of numbness, tingling, and/or burning and progressing to pain and disability. Given poor results with conventional pharmacological treatments, alternative therapies directed at slowing or halting the process are becoming attractive.

Objective: To test the effectiveness of magnet therapy in neuropathic pain and also to assess the role of placebo. Secondary objectives were to quantify nerve conduction, electrophysiologic changes, and neurologic examination changes over a four-month period.

Subjects: There were 24 initial patients; 19 completed the four-month trial. Ten patients had advanced refractory DPN and nine had non-DPN. All patients had failed to improve with various conventional pharmacologic treatments (e.g., analgesics, NSAIDs, anticonvulsants, tricyclites). Acupuncture was also tried by a few individuals. In the control group, individuals had peripheral neuropathies secondary to multiple myeloma, alcoholism, or ischemia.

Design: A randomized, double-placebo crossover study that entailed four phases.

Intervention: Patients randomly received an active magnetic foot insole (475 gauss) for one foot and a sham insole for the other. Subjects scored their complaints of burning, numbness, and tingling pain independently in both feet twice a day using a standardized visual analog scale (VAS) scoring system. After 30 days, the sides of the active and sham magnetic insoles were switched for an additional four weeks. At the end of a month, the subjects received two new active magnetic foot insoles (475 gauss) and continued for eight weeks rating their levels of pain twice a day.

Results: Improvement was significantly more pronounced in the diabetic cohort, 90% vs. 33%, at the end of the four months ($P < 0.02$). During the first month, the placebo response was noted to be the same in both groups (22%) for symptoms of burning, numbness, and tingling. In the second month, the placebo effect was greater in the DPN cohort (38% vs. 22%). At the end of four months, improvement was significantly more pronounced in the diabetic cohort for burning ($P < 0.05$), numbness, and tingling reduction ($P < 0.05$). Neuropathologic differences identified severe axonal damage principally in the diabetic cohort, whereas mild demyelinating changes were seen principally in the non-DPN group.

Conclusion: These findings are predictive of success in use of magnet therapy for DPN. The constant wearing of magnetic devices was able to dramatically suppress the neuropathic symptoms of burning pain, numbness, and tingling in the diabetic cohort (90%) as compared to the non-diabetic cohort (33%).

Comment: A number of studies have been conducted using magnets to abate pain, but this is the first randomized, placebo-controlled study to demonstrate a therapeutic benefit from magnetic foot pads in human diabetic polyneuropathy. Although the response was palliative, not curative, the results are impressive and suggest that a legitimacy exists for magnet therapy as a safe approach in symptom management in neuropathic diabetic foot pain. These preliminary data need to be validated by larger longitudinal studies and warrant further investigation into magnet use for other conditions. ❖

In Future Issues:

Does Intercessory Prayer Bring Healing?

Cranberry and Urinary Tract Health

Humor as a Healing Modality in Cancer