

CHIROPRACTIC NEUROLOGY RESEARCH BRIEF

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Chiropractic's Effectiveness for Headaches

A Review of Randomized Controlled Trials

Chiropractic is the most common alternative-medical treatment for headaches in the United States (1). There are a number of randomized controlled trials that have demonstrated the effectiveness of chiropractic therapy in the treatment of tension, cervicogenic and migraine headaches.

Tension-Type Headache

In order to determine the effects of spinal manipulation on adults with episodic tension-type headaches, Bove (2) divided 75 patients into two treatment groups. One group received deep friction-massage and spinal manipulation. The other group received deep friction-massage with placebo laser treatment. Both groups received eight treatments over a four-week period. By week seven, each group experienced significant reductions in mean daily headache hours and the mean number of analgesics per day. These improvements were maintained throughout the observation period. This study concluded as an isolated intervention, spinal manipulation does not seem to have a positive effect on episodic tension-type headache. A closer look at the study, however, revealed that manipulation was not used as an isolated treatment because it was combined with deep friction-massage. It did find improvements in the manipulation group and it found deep friction-massage might be of some benefit, as well.

Boline (3) compared the effectiveness of chiropractic manipulation and amitriptyline for chronic tension-type headache. One hundred fifty patients were divided into two groups. One group received spinal manipulative therapy by chiropractic physicians and the other group received amitriptyline medication by a medical physician. Both groups were treated for six weeks. During the treatment period, both groups improved at similar rates in all primary outcomes. In relation to baseline values four weeks after cessation of treatment, the spinal manipulation group showed a reduction of 32 percent in headache intensity, 42 percent in headache frequency, 30 percent in over-the-counter medication usage and a 16 percent improvement in functional health status. By comparison, the amitriptyline group showed no improvement or a slight worsening from baseline values in the same four outcome measures. In addition, the study reported amitriptyline patients (82 percent) reported more side effects including drowsiness, dry mouth and weight gain compared to patients receiving chiropractic care (4.3 percent experienced

soreness/stiffness). The results of this study showed chiropractic manipulation is an effective treatment for tension headache and the benefits were sustained four weeks following treatment. The therapeutic benefit associated with chiropractic manipulation resulted in a decreased need for over-the-counter medication.

Cervicogenic Headache

Nilsson (4) studied 39 patients to determine if cervical spinal manipulation as an isolated intervention had any effect on cervicogenic headache. Half of the group received cervical manipulation and the other half received low-level laser therapy in the upper cervical spine and deep friction-massage in the lower cervical and upper thoracic spines. Both groups were treated twice a week for three weeks. The study found a significant reduction in the manipulation group on all three outcome measures (headache intensity, frequency and analgesic use). The results of this study suggest a possible effect of manipulation on cervicogenic headache. The author, however, mentioned that differences between the two treatment groups failed to reach statistical significance because of methodological problems.

Because of the problems with the previous study, Nilsson (5) performed a follow-up study. Fifty-three subjects were divided and received the same treatment and frequency of treatment as the previous study. The study found analgesic use decreased by 36 percent in the manipulation group, but was unchanged in the soft tissue group. Headache frequency decreased by 69 percent in the manipulation group compared to 37 percent in the soft tissue group. Headache intensity decreased by 36 percent in the manipulation group compared to 17 percent in the soft tissue group. In this study, the differences in all outcomes between the two treatment groups were statistically significant.

Jull et al. (6) studied 200 subjects with cervicogenic headache. The subjects were randomized to receive manipulative therapy, exercise therapy, combined therapies, or nothing (control group). The study found the manipulation and exercise groups had significantly reduced headache frequency and intensity following treatment. The combination of therapies was not significantly superior to either therapy alone, but 10 percent more patients gained relief with combined therapies. The study concluded manipulative therapy and exercise can reduce the symptoms of cervicogenic headache and the improvement was maintained at twelve-month follow-up.

Migraine

In one of the earliest randomized controlled trials of spinal manipulation and migraine, Parker (7) divided 85 subjects into three treatment groups. All treatment groups received spinal manipulation by an M.D., a physiotherapist or a chiropractor. The authors concluded, *“For the whole sample, migraine symptoms were significantly reduced.”* Manipulation performed by all therapists were equally effective, however, the subjects treated by chiropractors reported a greater reduction in pain associated with their attacks. In addition, migraine attacks reduced a further 19 percent at the 20-month follow-up period (8).

More recently, Nelson (9) studied 218 patients with migraine headache. The patients received spinal manipulation, amitriptyline or a combination of both treatments for eight weeks. A reduction in headache index scores during treatment compared with baseline values was 49 percent for amitriptyline, 40 percent for spinal manipulation and 41 percent for the combined group. Four weeks following treatment, the reduction from baseline was 24 percent for amitriptyline, 42 percent for spinal manipulation and 25 percent for the combined group. Similar to the Boline (3) study of tension headaches, amitriptyline appears to only have short-term benefits. Once amitriptyline use is discontinued, headache index scores revert toward baseline values.

The authors concluded, *“There was no advantage to combining amitriptyline and spinal manipulation for the treatment of migraine headache. Spinal manipulation seemed to be as effective as a well-established and efficacious treatment (amitriptyline), and on the basis of a benign side effects profile, it should be considered a treatment option for patients with frequent migraine headaches.”*

One hundred twenty-seven patients with migraine received chiropractic manipulation or detuned interferential (control). They received a maximum of 16 treatments over a two-month period. The study found the chiropractic group showed statistically significant improvements in headache frequency, duration, disability, and medication use compared to the control group. Twenty-two percent of the chiropractic group reported more than a 90 percent reduction of migraines. Fifty percent of the remaining chiropractic patients reported significant improvement in the morbidity of each episode (10).

Finally, Duke University released a report after assessing evidence from randomized controlled trials and other prospective, comparative clinical trials for the efficacy and safety of behavioral and physical treatments for tension-type and cervicogenic headache. Interestingly, the report states that physical treatments, such as cervical spinal manipulation, are primarily aimed at the prevention of headache episodes rather than the alleviation of symptoms once an attack has begun. After reviewing the studies, the authors reported cervical spinal manipulation is substantiated by scientific evidence in the management of both tension-type and cervicogenic headaches. They also suggest manipulation may be the first choice for most patients and may also be well-suited for patients who have poor tolerance to medication, have contraindications to medication, experience insufficient relief from or are unresponsive to medication, wish to become pregnant (or are nursing), have a history of long-term, frequent, or excessive use of pain medication, or simply prefer to avoid medication use (11).

Summary

Chiropractic therapy is effective treatment for headaches with reductions in frequency, intensity and duration and it reduces the need for long-term analgesic use and its side-effects.

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