

Active Intervention Best for Whiplash CME

News Author: Laurie Barclay, MD

CME Author: Charles Vega, MD

Nov. 24, 2003 — Active intervention is more effective than standard care for patients suffering from whiplash, according to the results of a three-year follow-up of a randomized controlled trial published in the Nov. 15 issue of *Spine*.

"There is no strong evidence for many treatments for whiplash-associated disorders," write Mark Rosenfeld, RPT, from the Sahlgrenska Academy at Göteborg University in Sweden, and colleagues. "Some studies provide weak evidence supporting active intervention."

In this prospective trial, 97 patients who sustained whiplash trauma in motor vehicle accidents were randomized to an active intervention or to standard care. Active intervention consisted of frequent active cervical rotation with assessment and treatment according to McKenzie's principles; standard intervention consisted of initial rest, soft collar, and gradual self-mobilization.

To compare the effect of early vs. delayed initiation of active intervention, treatment regimens were begun either within 96 hours or delayed 14 days from the date of the motor vehicle accident. On average, the active intervention required four treatment sessions.

Compared with standard intervention, active intervention was associated with reduced pain intensity and sick leave ($P < .05$). Although delaying intervention by two weeks did not affect this outcome, only patients receiving early active intervention had total cervical range of motion at three years, which was similar to that of matched controls who did not sustain whiplash.

"In patients with whiplash-associated disorders, active intervention is more effective in reducing pain intensity and sick leave, and in retaining/regaining total range of motion than a standard intervention," the authors write. "Active intervention can be carried out as home exercises initiated and supported by appropriately trained health professionals.... The emphasis should be on frequently repeated cervical rotation."

The local research committee in southern Elfsborg County, the Swedish National Health Insurance, and the Vårdal Foundation supported this study.

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Learning Objectives

Upon completion of this activity, participants will be able to:

- Describe the symptoms and long-term prognosis of whiplash-associated disorders.
- Evaluate the efficacy of active vs. standard intervention for whiplash injury.

Clinical Context

Whiplash-associated disorders can lead to both short- and long-term health problems. According to the authors of the current study, short-term consequences of whiplash-associated disorders may include neck pain, headache, shoulder pain, and cognitive disturbances and other psychological symptoms. In a study of 108 patients analyzed 17 years after a motor vehicle accident, 55% reported symptoms related to the accident, with neck pain and headache being the most common complaints. The research by Bunketorp and colleagues, which was published in the June 2002 issue of the *European Spine Journal*, also demonstrated that one third of subjects with residual symptoms claimed disability at work compared with 6% of subjects without residual symptoms.

Standard treatment for whiplash consists primarily of rest and a soft cervical collar for comfort. A study by Rosenfeld and colleagues in the July 15, 2000, issue of *Spine* challenged this treatment regimen by

comparing it with an active-treatment regimen consisting of early and aggressive spine mobilization. At six months, subjects randomized to active treatment reported less pain, especially when active treatment was initiated within 96 hours of injury.

The current study follows these same patients for up to three years to determine if active treatment is superior in preventing long-term pain and disability. The authors also compared cervical range of motion in patients with whiplash-associated disorders to that of patients who had not suffered any injury.

Study Highlights

- Subjects were selected from outpatient clinics and emergency wards if they had history of exposure to whiplash trauma. All patients underwent cervical radiography, and those with fractures, neurologic deficits, or other complicated presentations were excluded.
- Participants were randomized into 1 of 4 treatment groups: standard or active intervention initiated within 96 hours of injury, or standard or active intervention initiated after a delay of 14 days.
- Standard intervention consisted of advice on suitable activities after injury and recommendations to rest the neck for one week before beginning limited stretching several weeks after the accident.
- Active intervention incorporated treatment sessions involving early cervical exercises that were to be repeated every waking hour. If symptoms persisted beyond 20 days, subjects were reexamined with a dynamic mechanical evaluation and given a personal rehabilitation program.
- Study outcomes included neck, head, and shoulder pain at 6 months and 3 years after randomization. Subjects were also evaluated for cervical range of motion between treatment groups at 6 months and against controls without a history of trauma at 3 years.
- 88 of 102 patients originally undergoing randomization were available for analysis at 6 months, and the follow-up rate at 3 years was 75%. Baseline characteristics between groups were similar.
- In the active-treatment group, the average number of treatment sessions was 3.95. 63% of active-treatment subjects had symptoms that extended beyond 20 weeks and received an individual rehabilitation program.
- Participants in both treatment groups experienced reductions in pain at 6 months and 3 years compared with baseline. However, compared with patients who received standard treatment, the active-treatment patients experienced significantly reduced pain and need for sick leave at both time points.
- Active treatment was not statistically superior to standard treatment in improving cervical range of motion, although scores for range of motion at 3 years favored active treatment ($P = .06 - .08$). In addition, only the active-intervention group that began treatment within 96 hours of injury demonstrated cervical range of motion similar to that of uninjured control patients at 3 years.
- The delay in treatment from 96 hours to 14 days did not singularly affect outcomes at 6 months or 3 years. However, a 2-way factorial design demonstrated that, in terms of improving pain intensity and cervical flexion at 6 months, it was better to receive active treatment early rather than late. Conversely, in the standard-treatment group, it was better to receive treatment late.

Pearls for Practice

- Whiplash may produce multiple symptoms in the acute phase that can become chronic medical problems.
- Active treatment involving early mobilization produces better outcomes than standard treatment for whiplash.