

RESEARCH ARTICLE

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Restoration of disk height through non-surgical spinal decompression is associated with decreased discogenic low back pain: a retrospective cohort study

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Abstract

Background:

Because previous studies have suggested that motorized non-surgical spinal decompression can reduce chronic low back pain (LBP) due to disc degeneration (discogenic low back pain) and disc herniation, it has accordingly been hypothesized that the reduction of pressure on affected discs will facilitate their regeneration. The goal of this study was to determine if changes in LBP, as measured on a verbal rating scale, before and after a 6-week treatment period with non-surgical spinal decompression, correlate with changes in lumbar disc height, as measured on computed tomography (CT) scans.

Methods:

A retrospective cohort study of adults with chronic LBP attributed to disc herniation and/or discogenic LBP who underwent a 6-week treatment protocol of motorized non-surgical spinal decompression via the **DRX9000** with CT scans before and after treatment. The main outcomes were changes in pain as measured on a verbal rating scale from 0 to 10 during a flexion-extension range of motion evaluation and changes in disc height as measured on CT scans. Paired t-test or linear regression was used as appropriate with $p < 0.05$ considered to be statistically significant.

Results:

We identified 30 patients with lumbar disc herniation with an average age of 65 years, body mass index of 29 kg/m², 21 females and 9 males, and an average duration of LBP of 12.5 weeks. During treatment, low back pain decreased from 6.2 (SD 2.2) to 1.6 (2.3, $p < 0.001$) and disc height increased from 7.5 (1.7) mm to 8.8 (1.7) mm ($p < 0.001$). Increase in disc height and reduction in pain were significantly correlated ($r = 0.36$, $p = 0.044$).

Conclusions:

Non-surgical spinal decompression was associated with a **reduction in pain and an increase in disc height**. The correlation of these variables suggests that pain reduction may be mediated, at least in part, through a restoration of disc height. A randomized controlled trial is needed to confirm these promising results.