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Peak scoliosis brace can reduce pain in adults with painful scoliosis: Results from a prospective cohort study

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Introduction: Adult scoliosis is sometime associated to back pain and severe curves can progress over time. The main approach for these patients is the surgical one, however surgery is not appropriate for all patients, and certain patients do not accept surgery. Despite scoliosis has been estimated to affect up to 68% of the population over 60, there is scant literature about conservative treatment for adult scoliosis. Custom fabricated rigid torso braces, similar to those commonly used for children are sometime used in adult patients, however, the goal of these braces is to correct and/or sustain the sagittal plane of patients, no data have been published on the efficacy of these braces in pain relief, and such braces are typically not well tolerated by adults. Recently a new brace has become available, the Peak™ Scoliosis Brace (Aspen Medical Products) designed to alleviate pain for adult patients with chronic pain secondary to scoliosis.

Aim: to test the efficacy of the Peak™ Scoliosis Brace in reducing pain in adult scoliosis patients.

Materials and Methods: Design: prospective experimental cohort study. Population: 20 adults with back pain secondary to Idiopathic Scoliosis. The sample size calculation based on a pilot study. Inclusion criteria: Adults affected by Idiopathic scoliosis of 30° Cobb or more and chronic low back pain (cLBP). Exclusion criteria: secondary scoliosis. Outcome measures: NRS, Oswestry Disability Index (ODI), Roland Morris Questionnaire (RM), COMI. Statistical analysis: paired t-test. Protocol: patients were evaluated at baseline immediately before starting with the brace and after 1 month. The brace must be worn for at least 2 hours per day.

Results: 20 out of 29 eligible female patients entered the study (age 67.8±10.5, curve 61.9±12.6° Cobb). We had no drop out. Worst pain (back or leg) and leg pain significantly improved from 7.15 to 5.85 and from 5.65 to 3.55 (p<0.05), while back pain improvement didn't reach statistical significance. Six patients achieved the minimal clinically important difference of 2 points for worst pain, 12 for leg pain. RM improved (p<0.05), no differences for ODI and COMI score.

Conclusion: The Peak Scoliosis brace showed a significant improvement at 1 month of worst pain and leg pain in a group of adult women with scoliosis and CLBP. Back pain slightly improved, but the change was not statistically nor clinically significant. Also the quality of life didn't change in a significant way even if the patients reported satisfaction with the treatment. The follow up time was really short, it's possible that a longer treatment could be more effective.