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Topic	Bracing for Kyphosis
Title	Bracing different types of adolescent hyperkyphosis: end-growth results of a controlled retrospective study.
Authors	Fusco C., Atanasio S., Zaina F., Negrini S.
Abstract	<p>Objectives: To verify the efficacy of brace treatment of adolescent hyperkyphosis, idiopathic and due to Scheuermann Disease (SD), on clinical parameters.</p> <p>Background: Adolescent hyperkyphosis, both idiopathic and due to SD is frequently treated with brace, nevertheless results are scarce and, especially there are few studies about the use of TLSO.</p> <p>Study Design: retrospective controlled study. Population: 15 patients with diagnosis of hyperkyphosis (10 male and 5 female, average age at diagnosis 13.8) that arrived at the end of treatment since our database start in 2003. Patients with idiopathic hyperkyphosis were 5 (2 females and 3 males) and 2 of them presented back pain at the start of treatment. In the group with SD there were 2 females and 8 males and 5 patients were painful.</p> <p>Methods: For all patients were prescribed a brace after first visit (Maguelone brace for 23 or 21 hours per day). Mean duration of treatment was 2,65 years. Outcome criteria: Mean C7 and L3 plumbline distance change and number of patients for which there was a significant change for C7 and L3 according to a previous study, where we considered clinically significant a change of at least 10 mm; disappearance of back pain. Statistics: ANOVA and chi-square.</p> <p>Results: Pre treatment C7 distances from plumbline in SD group was 73.5 ± 7.5mm and post treatment was 60 ± 15.1 while L3 distance changed from $70,5 \pm 9,6$mm to $39 \pm 8,4$mm; about idiopathic hyperkyphosis patients we observed for C7 distance a change from 71 ± 4.1 mm to 41.0 ± 7.4mm. These changes were statistically significant in both groups but not among groups. About clinical significant changes 70% of patients improved and 30% unchanged in SD vs 100% improved in idiopathic for C7; for L3, 40% improved and 60% unchanged in SD vs 90% improved and 10% unchanged in idiopathic one. Back pain disappeared within the first 6 months of therapy in all patients.</p> <p>Conclusion: Brace can correct effectively adolescent hyperkyphosis both idiopathic and due to SD allowing a progressive reconstruction of sagittal outline. Even if results are better in idiopathic group, however brace shows to improve also SD by ensuring also a proper vertebral body growth.</p>

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