

Oral presentation

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Efficacy of specific SEAS exercises for hyperkyphosis: end-growth results of a controlled prospective study

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Objective

The aim of this prospective controlled study is to present end-growth results of different exercise for Hyperkyphosis.

Background

In the scientific literature there are not available papers on exercise in the treatment of adolescent hyperkyphosis. It is only possible to find papers on exercise to avoid progression of kyphosis and risk of falling in the elderly. Nevertheless, this is a diffuse approach to this pathology especially in Europe and Japan.

Methods

This study design is a controlled prospective study using a population of 40 adolescent outpatients (19 male, 21 female) with hyperkyphosis who were divided into 2 exercise groups and treated with exercise until end-growth. SEAS Groups (18 subjects) were treated with specific SEAS exercises at our centers. The control group (22 subjects) were treated with "classical" exercises at different facilities.

The outcome criteria that were evaluated were: the difference in the number of braces prescribed; the mean plumb-line distances at C7 and L3; the number of patients who had clinical changes. According to a previous study we considered a clinically significant change one to be at least 10 mm. Statistical analysis was done with Anova, t-test, Chi square.

Results

Three patients in the control group had a brace prescription versus none in the SEAS. No significant statistical differences between pre treatment values were found between the two groups. No significant statistical differences between post treatment values were found between the two groups. Statistically significant Improvement of the plumbline distance after treatment were found in both groups. The number of improved patients was significantly higher in the SEAS Group ($p < 0.05$) while the number of worsened patients significantly higher in the controls.

Conclusion

Physical exercises to improve hyperkyphosis in adolescents are effective. The quality and type of exercises seems to be relevant to reduce brace prescription and to achieve a better result.