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Compliance comparison of different bracing concepts

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Introduction

Success in AIS-Bracing depends completely on patients' compliance. Compliance is an irreplaceable condition of IAS-Bracing. The investigation tries to find out differences in compliance between different bracing-methods and it compares especially Full-Time- and Night-Time-Bracing.

Material and methods

200 AIS patients (70 traditional Full-Time-Braces, 96 double treatments with traditional Day-Brace plus additional Night-Time-Brace and 34 patients with isolated Night-Time-Braces) have been included in a comprehensive, anonymous compliance survey. We distinguished daytime- and nighttime-compliance and various kinds of activity. We also asked patients and parents for their preferences concerning Early Night-Time-Bracing (ENTB).

Results

Among the users of traditional Full-Time-Braces we found a noncompliance rate of more than 40% during daytime. All of the braces were worn much more regularly during the night. Noncompliance rates for night use ranged from 15.3% (traditional Full-Time-Braces) to only 8% for isolated Night-Time-Braces. 86.6% of the patients indicated that their quality of life (QOL) was most affected during daytime use and only 7.2% during night use. 98% of patients and parents preferred ENTB and were against waiting for verification of progression, because the avoidance of Full-Time-Treatment had highest priority for them. But facts are completely reverse: Only 13% of AIS brace-patients get an Early-Night-Time-Treatment. The majority of patients are still getting treatment at more than 25° Cobb and ad hoc 23 hours.

Discussion

All the results of our compliance research show that physical and psychological stress of AIS Full-Time-Bracing is much higher than with Night-Time-Bracing, and the compliance rates are much lower during the day. Patients and parents want progression to be stopped as soon as possible to be, in particular, sure to avoid Full-Time-Bracing. On the other hand, success of bracing is 100% dependent on patients' compliance. All of these facts underline the need for a treatment concept which can avoid AIS progression effectively while at the same time causing a minimal effect on the QOL. The most careful way of bracing is ENTB of moderate curvatures. In the range of 16 - 25° Cobb it is possible to stop progression and avoid Full-Time-Bracing with a success rate of 85% [1] by only using Night-Time-Braces with moderate correction forces, whereon patients respond with best acceptance.

Conclusion

By far the best compliance of AIS brace-treatment we found among patients who wear Night-Time-Braces at a point of moderate curvatures and enjoy daytime life without a brace. Their curves can be stopped with minimal effect on their QOL. Accordingly, in the future ENTB should become an integral part of AIS-therapy in between only physiotherapy and Full-Time-Bracing.

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Reference

1. Andreas Selle, Jens Seifert, Carl Gustav Carus: Early night-time-bracing – an alternative in AIS management. *Scoliosis* 2010, **5**(Suppl 1):O57.

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