Lek. Barbara Dobies-Krześniak

Nadruchomość stawów oraz lateralizacja stronna jako predyktory bocznego skrzywienia kręgosłupa

Rozprawa na stopień doktora nauk medycznych i nauk o zdrowiu
w dyscyplinie nauki medyczne

Promotor: dr hab. Beata Tarnacka prof. nadzw. NIGRiR

Klinika Rehabilitacji

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SUMMARY

Background: Idiopathic scoliosis (IS) is radiologically diagnosed tridimensional deviation of the spine. Lack of stability of the spinal joints and asymmetrical spinal load are mentioned as potential causes of IS. Joint hypermobility (JH) can be diagnosed in the case of increased range of joint mobility and the absence of systemic diseases. Hypermobility examination is simple and based typically on Beighton score. Lateral preference may also be obtained by quick and simple survey. Simplicity of those examinations could potentially help identify children at higher risk of developing IS.

Objectives: The aim of this study was to assess JH prevalence in children with IS and to analyze coincidence of JH with scoliosis features, age, gender, and bone maturity and to assess the hypothesis that functional laterality features are associated with IS incidence.

Methods: The study enrolled 125 children aged 7–18 years (mean 13.2 ± 2; Cobb angle range 10 °–53 °; mean 24.3 ± 11.7) diagnosed with IS. The Beighton scale was used to determine JH. The control group included 83 volunteers. The relationship between JH and IS was assessed. Secondly, JH prevalence according to age, gender, curve severity, number of curvatures and Risser sign in IS group was summarized. The Lateral Preference Inventory survey was performed by 59 patients with radiologically confirmed idiopathic scoliosis (mean age 13 years, 41 girls and 18 boys) and 55 controls (mean age 10.5 years, 38 girls and 17 boys). Direction, strength, and consistency of lateral dominance was obtained.
Continuous data were compared by Student's t-test or U Mann-Whitney test where appropriate. Categorical data were compared by chi-squared test and Fisher's exact test. Value $p < 0.05$ was considered statistically significant.

Results: JH was diagnosed in 64 (51.2%) IS patients and in 34 (41%) control group children. The difference found was not statistically significant ($p = 0.148$). No significant difference was found comparing IS subgroups with curve size cut-off point from 20 degrees, single/double curve scoliosis, male/female gender, age cut- off point 13,2 years of age, and Risser test score 0–2/3–5. Laterality groups were significantly different in terms of age ($p < 0.001$) and dependent variables: height ($p < 0.001$) and weight ($p < 0.001$). Statistical analysis showed some trends, but the results obtained were not statistically significant for all: direction, strength, and consistency of lateralization.

Conclusions: This study shows that children with JH features do not have a statistically significant increased risk of IS co-diagnosis. The relationship between scoliosis and laterality is not a simple causal relationship. Both relations need further investigation.