

GERÓNIMO, A; QUIERO, G; STEGMANN, JFundación SPINE Socio.Psico.Inmuno.Neuro.Endocrinología | alejandro.geronimo@hotmail.com.ar

Introduction

The aim of this study was to establish reference values of the different structural alterations of individuals with Prader Willi Syndrome (PWS), and to evaluate the relationship between the severity of spine deviations and the different imbalances that can be identified involving the lower limbs, such as discrepancy of iliac crests and genu valgo.

Methods

We carried on a non-experimental, descriptive, cross-sectional study. The sample consists of 23 people with SPW, ranging in age from 10 to 40 years, where 34.7% of the population is female and 65.3% male, who attend treatment at the Foundation Spine. All participants were evaluated with X-ray spinogram. The presence of scoliosis was determined and classified according to the region and affected areas, measured in degrees through Cobb angles. Using the same radiological study, the height difference between the iliac crests was measured, drawing horizontal lines over each anterosuperior iliac spine and establishing the distance between lines in millimeters. Furthermore, the extent of genu valgo was evaluated by means of the Morley classification, measuring the intra-malleolar distance in centimeters, thereby reflecting the underlying severity. Spearman correlation coefficients were performed to assess the relationship between continuous variables, and all statistical analyses were performed using SPSS software package.

Results

According to the Morley classification, 52% showed a grade 2 valgus (M = 4), 17% a grade 3 (M = 6.3), and a 30% grade 4 valgus (M = 9.5). On the other hand 44% of patients had mild scoliosis (mean difference 9.2 mm), 6% had mixed mild / moderate scoliosis (mean difference of 20 mm), 31% had moderate scoliosis (mean difference 4.7 mm), 6% with mixed scoliosis (mean difference 5.5 mm), and 6% with a severe grade (mean difference 12mm).

Within grade 2 genu valgo, 20% had mild scoliosis, 7% mixed, 20% moderate, and 7% had severe scoliosis. Among patients with grade 3 genu valgo, only 7% had moderate scoliosis; whereas within patients with grade 4 genu valgo, 27% had mild scoliosis, 7% moderate, and 7% mixed. Finally, using Spearman correlation coefficients, we did not identify any significant relationships between the different variables explored.

Conclusions

In this study, we did not identify relationships between the severity or degree of the variables explored, thus corroborating the idiopathic nature of scoliosis, but leaving a space of uncertainty in its relationship with the different postural disorders of the lower limbs.

Although we did not obtain the expected results, evaluation of the motor and postural approach is important in subjects with PWS from early age, since despite the most common practice involves only the evaluation of the spine, different lower limb imbalances can be found in these patients, forgetting the essentials of motor development in the first years of life.

References:

- Cassidy, S. B., Schwartz, S., Miller, J. L., & Driscoll, D. J. (2012). Prader-willi syndrome. *Genetics in Medicine*, 14(1), 10.
- Holm, V. A., & Launen, E. L. (1981). Prader-Willi syndrome and scoliosis. *Developmental Medicine & Child Neurology*, 23(2), 192-201.
- Butler, J. V., Whittington, J. E., Holland, A. J., Boer, H., Clarke, D., & Webb, T. (2002). Prevalence of, and risk factors for, physical ill-health in people with Prader-Willi syndrome: a population-based study. *Developmental medicine and child neurology*, 44(4), 248-255.