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ADVANCED SPECIFIC OBJECTIVES REGARDING RELATIONSHIP BETWEEN SCOLIOTIC MAIN CURB* ANGULATION AND MAXIM PRESSURE EXERTED BY THE FOOT DURING GAIT PHASES, IN CHILDREN AND ADOLESCENTS WITHOUT PRIMARY PODAL PATHOLOGY

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Constantin Florin Dragan[1,2], Liliana Padure[1,2],Gelu Onose[2,3]

[1] Teaching Centre for Children Neurorehabilitation "Dr. N. Robanescu", Bucharest, don_floricos@yahoo.com
[2] University of Medicine and Pharmacy "Carol Davila", Bucharest
[3]Teaching Emergency Hospital "Bagdasar-Arseni", Bucharest

Abstract

Introduction: The study is developing at "Dr.N. Robanescu" National Rehabilitation Center for Children where a lot of children with scoliosis are in evidence and get treatment. Thus, we want to consider as objective the podal support highlighted in specific investigations, to see if there is a connection between the curvatures and the modification (deviation from normal) of the foot contact with the ground. The reason for choosing this theme is that we want to present a new assessment method for the patient with vertebral static disorder. The study aims to present how this method helps us to analyze also the possibilities of multidisciplinary therapeutic intervention for the patient with scoliosis.

Materials and methods: We used the modern training and assessment technique such as: Footscan 7 gait 2nd generation, with a 2m board, with 16.000 sensors, unique in the specialty centers for children from our country; Footscan Balance 7.The plantar support represents the foot contact with the support surface in pause and walking, highlighted in our study by the Foot 7 gait 2nd generation device. The studied/ analyzed group consists of 120 patients with scoliosis, aged between 5 and 18 with 72 girls and 48 boys. We have been evaluating them since their first admission to our hospital at the beginning of 2013 until now. The patients were analyzed in 2 situations as follows: without corset (in static and dynamic position) and with Cheneau Corset (in the same situations), this orthosis model being recommended by the specialist doctor during 3 periods of hospital admission. The static processing will be achieved after the accomplishment of the frequency histograms afferent to the identification of the normality degree of the populations' distribution. For differentiation, we will be able to perform parametric tests (type t) or nonparametric tests (type, for example, chi2).

Results: According to these tests we will see if the observation statistically objectifies or not. The static results reveal that the pressure applied by the feet on the support surface is modified by the repositioning of the spine in the Cheneau corset (which is lower when wearing the corset), during the 3 admission periods and is statistically highly significant for all the situations.

Conclusion: There is a relation between the rigor of the scoliotic deviation and the pressure exerted by the foot on the support surface: when the curvature decrease with more than 15 degrees, passively, by applying the Cheneau corset the plantar support corrects by uniforming the pressures both on the forefoot and on the calcaneal region, through the increasing of the surface contact with the ground – towards the level of normality.