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Comparison on Bleck's Scores for Walking Prognosis between Walking Chidren and Non-Walking Children with Spastic Quadriplegia Cerebral Palsy

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Abstract

The purpose of this study was to determine the difference of Bleck's Scores between the walking group and the non walking group in children with spastic quadriplegia cerebral palsy. Participants were thirty one children including nine children who could walk without aid or with crutches and 22 children who could not walk without aid or could walk with wheels. The result showed that there was not significant difference in Bleck's Scores between waling group and non walking group.

Key Words: Walking Prognosis, postural reflexes and reactions, Cerebral Palsy, Bleck's scoring system

Introduction

Infantile postural reflexes and reactions have been using for walking prognosis in chidren with cerebral palsy. Concerning the predictive value of postural reflexes and reactions for walking prognosis in cerebral palsy, many studies have been reported. However, those studies had dealt with restricted number of reflexes and reactions (ex. Molnar, 1978; Molnar and Gordon, 1976; Trahan and Marccux, 1994). Then there were few studies dealt with systematic prognostic system by use of many kinds of postural reflexes and reactions.

Bleck(1975) and Bleck (1979) reported on the predictive value of the scoring system which used seven postural reflexes and reactions for walking prognosis in children with cerebral palsy. In Bleck's scoring system, following seven signs were scored one or zero point, based on it's presence or absence; (1) Asymmetrical tonic neck reflex : one point if present, (2) Symmetrical tonic neck reflex : one point if present, (3)Moro reflex : one point if present, (4) Neck-righting reflex : one point if present, (5) Extensor thrust : one point if present, (6) Foot placement reaction (should be present) : one point if absent, (7) Parachute Reaction (should be present) : one point if absent. Bleck (1975) mentioned "a score of two points or more gave a poor prognosis for walking, a one point score was a guarded prognosis ('might walk'), and a zero score indicated a good prognosis." Bleck(1975) insisted that his scoring system had high predictive value on walking prognosis in the children with cerebral palsy.

The purpose of this study was to examine the difference of Bleck's Scores between the walking group and the non walking group in children with spastic quadriplegia cerebral palsy.

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Method

1. Participants

Participants were thirty one children with spastic quadriplegia cerebral palsy. Nine children could walk without aid or with crutches. Twenty two children could not walk without aid or could walk with wheels. The two groups were equivalent in the postural-motor developments, neurophysiological symptoms, epilepsy and type of cerebral palsy but verbal expression, with the walking group having higher than the non walking group (Fisher's exact test, $p<.01$). The possible effects of verbal expression were controlled in the analysis of Bleck' Score.

2. Examination of Bleck's Seven Reflexes and Reactions and Method of Scoring for Prognosis

All chidren were examined for seven postural reflexes and reactions. And then seven postural reflexes and reactions were scored one or zero point by the scoring system of Bleck (1975). Seven postural reflexes and reactions were as follows; (1) Asymmetrical tonic neck reflex: one point if present, (2) Symmetrical tonic neck reflex: one point if present, (3) Moro reflex: one point if present, (4) Neck-righting reflex: one point if present, (5) Extensor thrust: one point if present, (6) Foot placement reaction (should be present): one point if absent, (7) Parachute Reaction (should be present): one point if absent. The point scores for each child were totalled. According to Bleck (1975), the total score determined the prognosis for walking; (a) a zero was a good prognosis, will walk; (b) a one point score was a guarded prognosis, might walk; (c) a two or greater score was a poor prognosis, will not walk.

Results

The means and the standard deviations on Bleck's Scores obtained by both waling group and non walking group were shown in In Table 1. The difference of Bleck's scores between walking group and non walking group was tested by analysis of covariance. No significant difference in Bleck's Scores between waling group and non walking group was found ($F=2.71$; $df=1,28$).

Table 1 Bleck's Scores in walking group and non walking group

	Walking group	Non Walk group
M	.37	1.62
SD	.47	1.92

Discussion

The purpose of this study was to examine the difference of Bleck's Scores between the walking group and the non walking group in children with spastic quadriplegia cerebral palsy. This study showed that there was no significant difference in Bleck's Scores between waling group and non walking group. This result did not support the study of Bleck (1975). Although Bleck (1975) used the predictive method, this study used correlational method. Then further study, which will use predictive and longitudinal method, are need to confirm the predictive value of Bleck's Score in relation to the types of children with cerebral palsy.

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