

Effect of VOJTA Therapy on Gross Motor Function in Children with Cerebral Palsy

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Abstract

Objective: To investigate the effect of VOJTA therapy on gross motor function in children with cerebral palsy. **Methods:** The 86 children with cerebral palsy were all from the First People's Hospital of Jingzhou City from January 2023-December 2023, and were divided into the control group and the study group with 43 cases according to the principle of voluntariness. **Results:** In terms of total effective rate of treatment, the gross motor function scale-88 (GMFM-88) was used to evaluate the effective rate before and after treatment, and the effective rate of the study group was higher than that of the control group, and the difference was statistically < significant, and the scores of gross motor items of GMFM-88 were better than those of the control group after treatment, and the difference was statistically significant ($P < 0.05$). **Conclusion:** The application of VOJTA therapy in the treatment of children with cerebral palsy can not only promote the rehabilitation of gross motor function, but also help to improve the treatment effect, and the earlier the treatment, the better.

Keywords

VOJTA Therapy, Children with Cerebral Palsy, Gross Motor Function

1. Introduction

Cerebral palsy in children, abbreviated as cerebral palsy, refers to postural abnormalities and gross motor delays caused by delayed motor development or brain injury caused by various factors from birth to one month after birth [1]. In infancy, it is often associated with primitive reflexia, epilepsy, perceptual impairment, and mental retardation [2]. Cerebral palsy is the main cause of poor

gross motor function in children, and the disability caused by cerebral palsy is more pronounced in children between the ages of 3 and 7 years. At this stage, the clinical treatment is mainly carried out by drugs, comprehensive rehabilitation training and surgery. VOJTA therapy is a type of exercise rehabilitation that helps children with cerebral palsy to improve gross motor function. Based on this, this study analyzed the treatment effect of two groups of children with cerebral palsy received by our hospital and the Maternal and Child Health Hospital from January 2023-December 2023, and the efficacy was satisfactory, which is reported as follows.

2. Data and Methods

2.1. Research Data

According to the admission time and the principle of voluntariness, the 86 children with cerebral palsy admitted to our hospital from January 2023-December 2023 were divided into the control group and the study group with 43 cases in each group. There were 21 males and 22 females in the control group. Age 1 - 6 years old, average age (1.26 ± 0.43) years. There were 25 males and 18 females in the study group. Age 1 - 5.5 years, average age (1.32 ± 0.32) years, the two groups of children were treated once a day, 20 days as a course of treatment, and the total treatment cycle was 3 courses. There was no significant difference between the two groups ($P > 0.05$). This study was approved by the Ethics Committee of the Academy.

2.2. Diagnostic Inclusion Criteria

1) Consistent with the diagnostic criteria for cerebral palsy in “Pediatric Cerebral Palsy”; 2) The diagnosis and classification conformed to the definition, diagnosis, and classification criteria for cerebral palsy discussed and approved by the 2008 National Conference on Pediatric Cerebral Palsy Rehabilitation [3], and 3) according to the child’s prenatal risk factors, neurological symptoms, primitive reflexes, abnormal posture and gross motor disorders, and increased or low muscle tone.

Exclusion Criteria: 1) Those who do not meet the diagnosis of cerebral palsy 2) Those who have genetic metabolism and kidney, liver, and heart organ insufficiency; 3) Transient developmental delay.

Treatment methods: The control group was given comprehensive rehabilitation therapy, and the study group was treated with VOJTA therapy on the basis of comprehensive rehabilitation therapy.

3. Control Group

Conventional comprehensive rehabilitation treatment: 1) Exercise therapy: Bobath therapy is the main one, among which Bobath is also known as neurodevelopmental therapy, which uses inhibition, facilitation, and slapping techniques to inhibit the abnormal posture of children according to the sequence of pediatric

neurodevelopment, strengthen the recovery of gross motor function, and promote the normal gross motor sensation and voluntary motor activity mode. Children with cerebral palsy were trained in guided gross motor function to inhibit abnormal primitive reflexes such as ATNR, strengthen normal gross motor development, reduce muscle tone, and improve muscle strength for 20 minutes per day. 2) Ueda method: through the Ueda upper limb method and the lower limb method, the contracture at the end of the limbs is relieved, so as to reduce the excessive tension of the limbs and trunk, so as to break the abnormal posture of a certain area of the child, which can reduce muscle tone, relieve muscle spasm, and prevent joint contracture and deformation. 3) Traditional Chinese medicine massage: massage the corresponding spasmodic muscle groups by pushing, pressing, holding, kneading, patting and percussion, etc., to reduce muscle tension and improve muscle strength; 4) Physical therapy: meridian pilot frequency is the use of low-frequency pulse current to stimulate the twelve meridians and acupuncture points of the human body to achieve therapeutic effects; 20 min/time, 1 time/d.

3.1. Study Groups

The conventional comprehensive rehabilitation treatment was the same as that of the control group, and the study group added Vojta therapy to the conventional comprehensive rehabilitation. 1) Vojta posture induction method: Vojta therapy mainly uses two main induced bands: reflex profiling and reflex rolling. 2) Reflex prone is to promote the head to rotate and lift up in a prone position, and strengthen the hand and knee support to promote crawling forward. First, the head and trunk of the child are in a straight line when the child is placed in the prone position on the treatment bed, and at the same time, the medial epicondyle of the humerus of the upper limb on the face side of the child is raised, the face is rotated 30°, the head is slightly bent forward, the forehead is extended against the bed and the neck, and the direction of stimulation is the medial, dorsal and caudal sides of the scapula, and the contralateral stimulation point is the same. 3) Vojta reflex turning is to take the supine position of the child, rotate the head to one side for 30° neck extension, head slightly forward flexion, upper limb extension on the side of the face, slight abduction of the lower limbs, mild flexion of the hip and knee joints, and compression stimulation of the chest on the face side of the face when the child turns over to the prone position and forms a straight line. Stretch the intercostal muscles and encourage the child to turn to the opposite side to complete the action.

3.2. Evaluation Index

Gross motor function. The gross motor function test (GMFM-88) was used to evaluate the gross motor function of the two groups before training and after 3 courses of training, with a total score of 264, including 60 points in the sitting position, 51 points in the rolling and lying position, 39 points in standing and standing, 42 points in climbing and kneeling, and 72 points in running, jumping

and walking. Scores are directly proportional to gross motor function [4].

3.3. Statistical Methods

Calculated data are expressed by ($x \pm s$), t-test; [n(%)] was used to represent the count data, chi-square test, and the difference was statistically significant with $P < 0.05$.

4. Results

Comparison of gross motor function (GMFM-88): There was no significant difference in pre-training GMFM-88 scores between the two groups ($P > 0.05$). After 3 courses of training, the GMFM-88 score in the study group was higher than that in the control group, and the difference was statistically significant ($P < 0.05$) as shown in **Table 1**.

5. Discussion

The etiology of pediatric cerebral palsy is complex, and a large number of studies have shown that it is related to the risk factors before and at birth, and the clinical symptoms are mainly abnormal muscle tone, limited limb functional activities, and backward movement. Because children with cerebral palsy have increased the burden on families and society, it is particularly important to explore the scientific and reasonable treatment effect. At present, the treatment of cerebral palsy is mainly based on routine rehabilitation training, and the training of the child's limbs makes it more and more normal, but the effect is not as good as expected [5]. In order to further improve the efficacy of children with cerebral palsy, our hospital and the doctors of Jingzhou Maternal and Child Health Hospital jointly negotiated and added VOJTA therapy to the conventional rehabilitation. VOJTA posture induction therapy [6] [7] [8] is a treatment method summarized by Dr. Vojta, a West German scholar, after years of clinical research and practice, it is a general term for the techniques that allow children to obtain the corresponding starting posture after fixation, give directional compression stimulation to specific parts of the body, and induce reflex crawling and reflex rolling. At the same time, it can strengthen the normal reflex pathway, inhibit the abnormal reflex pathway, and strengthen the recovery of gross movements such as turning over, sitting, and abdominal crawling, so as to achieve the purpose of treatment.

Table 1. Comparison of GMFM-88 scores between the two groups ($x \pm s$ points).

Constituencies	Before treatment	After 3 courses of treatment	t-value	p-value
Control group (n = 43)	53.29 ± 11.2	57.44 ± 13.08	1.581	0.118
Study Groups (n = 43)	52.9 ± 10.42	74.26 ± 13.61	2.57	0.012
t-value	0.18	5.843		
P-value	0.858	0.025		

6. Conclusion

The results of this study showed that the effective rate of the study group was significantly higher than that of the control group (see **Table 1**), which showed that the effect of VOJTA therapy in the treatment of cerebral palsy was more obvious than that of conventional rehabilitation.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Zhang, P., Hou, J.H. and Shan, H.J. (2017) Study on the Improvement of Motor Function of Children with Spastic Cerebral Palsy. *Chongqing Medicine*, **46**, 3832-3834.
- [2] Wang, J., Chen, J., He, AL., et al. (2019) Acupuncture and Massage in the Treatment of 30 Cases of Spastic Cerebral Palsy in Children. *Journal of Shaanxi University of Traditional Chinese Medicine*, **42**, 107-110.
- [3] Chen, X.J. and Li, S.C. (2007) Definition, Classification, and Diagnostic Criteria of Pediatric Cerebral Palsy. *Chinese Journal of Physical Medicine and Rehabilitation*, **29**, 309.
- [4] Wang, Y.F., Li, X.J., Lv, Y., et al. (2012) Effects of Core Stability Training on Gross Motor Function and Walking Ability of Children with Spastic Cerebral Palsy. *Chinese Journal of Rehabilitation Theory and Practice*, **18**, 350-353. <https://www.cjrtponline.com/CN/Y2012/V18/I4/350>
- [5] Wu, T. and Zhang, X. (2016) Observation on the Rehabilitation Effect of Modern Rehabilitation Concept Combined with Acupuncture and Massage on Pediatric Cerebral Palsy. *Sichuan Journal of Traditional Chinese Medicine*, **34**, 193-195.
- [6] Lin, Q. and Li, S. (2004) Cerebral Palsy in Children. Peking University Medical Press, Beijing.
- [7] Li, S.C. (2000) Pediatric Cerebral Palsy. Henan Science and Technology Press, Zhengzhou, 220-226.
- [8] Dong, Y. and Zhao, R.A. (2004) Discussion on the Relationship between High Risk of Cerebral Palsy and Clinical Types in Children. *Chinese Journal of Rehabilitation Medicine*, **1**, 36-37.