

Improvement of Tongdu Qiyu Acupuncture Combined with Language Behavior Teaching Study on Language Communication Function of Children with Temporary Mental Retardation (PIDD)

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Abstract: To explore the efficacy of Tongdu Qiyu acupuncture combined with language behavior teaching in the rehabilitation of temporary mental retardation. Methods: from January 2020 to December 2021, 80 children with temporary mental retardation in our hospital were selected and randomly divided into control group and observation group, 40 cases in each group. Both groups were treated with sensory integration therapy, round language training, occupational therapy, transcranial magnetic stimulation therapy and other conventional treatment. The control group was treated with language behavior teaching intervention, while the observation group was treated with Tongdu Qiyu acupuncture on the basis of language behavior teaching. After 3 months of treatment, the language development quotient of S-S examination, the language and personal social scores in Gesell development scale, and the learning and language milestone skills scores in vb-mapp were compared between the two groups. Results: the curative effect of the observation group was significantly higher than that of the control group; The effect of language function and personal social interaction is significant; The effective rate of the observation group was significantly higher than that of the control group in terms of requests, naming, listener response, lrffc, visual perception / pairing, social behavior / games, classroom / group rules, voice, dialogue and other skills. Conclusion: Tongdu Qiyu acupuncture combined with language behavior teaching has a good therapeutic effect on transient mental retardation, and can significantly improve the language communication function of children.

1. Introduction

Intellectual Developmental Disorder (IDD) is a group of diseases caused by a variety of causes starting from the developmental stage. It is characterized by that the intelligence function and adaptive behavior of standardized test individuals are lower than two or more standard deviations of the population [1]. It is one of the main causes of disability for children in the world [2-3]. ICD-11

classifies IDD as mild, moderate, severe, extremely severe, temporary intellectual development disorder (PIDD) [1] and unspecified IDD. ICD-11 describes the diagnosis of PIDD as: there is evidence of intellectual development disorder, but the individual is an infant or a child under the age of 4, or the individual is unable to effectively evaluate the intellectual function and social adaptive behavior due to sensory or physical disorders (such as blindness, pre lingual deafness), movement disorders, serious problem behaviors or concurrent mental behavior disorders. This kind of children can develop into normal children through early diagnosis and active intervention. IDD is diagnosed if PIDD is not normalized by the age of 4. Mental retardation is a developmental disorder of children, and language communication disorder is one of its main clinical manifestations. Language communication lag has become the main concern of parents, which is related to the quality of life of children. Therefore, it is particularly important to give PIDD effective language communication intervention as soon as possible. In this study, Tongdu Qiyu acupuncture combined with language behavior teaching was used to treat children with PIDD, and its curative effect was discussed. The report is as follows.

2. Data and methods

2.1 General information

This study selected 80 children with PIDD who were treated in Xi'an traditional Chinese medicine encephalopathy hospital from January 2020 to December 2021 as the research object. Case inclusion criteria: the diagnosis of PIDD (ICD-11 disease code 6a00.4) was confirmed by clinical evaluation (1) 6 months \leq 48 months, regardless of gender; (2) There is evidence of mental retardation, and the DQ value of two or more items of Gesell developmental diagnosis scale is \leq 70; The parents of the children signed the informed consent form. Exclusion criteria: among the selected PIDD children, the following problems were excluded: other motor retardation / disorders were known; Unexplained regression / degradation of motor, language or cognitive functions; Those who have autism spectrum disorder or tendency (ABC score is greater than 32) and have severe visual or auditory impairment and cannot cooperate with the assessment; Genetic metabolic diseases, endocrine diseases, chromosome diseases, autoimmune diseases, CNS congenital malformations and other serious systemic diseases, blood system diseases, infectious diseases; Combined with liver and kidney organic lesions; Patients with severe acupuncture syncope or refusal to accept acupuncture treatment have bleeding tendency.

They were randomly divided into control group and observation group with 40 cases in each group. There were 27 males and 13 females in the control group; The age was 3.51 ± 1.06 years old. There were 30 males and 10 females in the observation group; The age was 3.01 ± 1.12 years old, and there was no significant difference in age and gender, which was comparable ($P > 0.05$).

2.2 Method

Conventional treatment patients in both groups were given conventional intervention treatment, including sensory integration therapy, round language training, occupational therapy, transcranial magnetic stimulation therapy, etc.

Control group: language and behavior teaching was given on the basis of conventional treatment. Before training, all children were evaluated by a professional qualified evaluator for vb-mapp language milestones to understand the children's language development level in detail and formulate individualized training plans. Professional special education teachers give one-on-one training. The training plan for each child includes: basic listener ability training, nonverbal communication ability training, conversion ability training for different listener abilities, listener

discrimination ability training for functional characteristics categories, expression requirements training, naming and description ability training, dialogue ability training, language function conversion ability training, functional communication skills training, communication skills generalization training, etc. The parents of the children were trained and instructed. After class, the parents carried out family training for the children according to the individualized training plan. The whole family teaching process was supervised by the special education teacher. All children were trained for at least 2 hours a day, 6 days a week, and the rehabilitation evaluation meeting was organized and the training plan for the next stage was formulated every 1 month. Three months was a course of treatment.

Observation group: Tongdu Qiyu acupuncture combined with language behavior teaching intervention. Acupoints selected for Tongdu Qiyu acupuncture method: shenting, Baihui, naohu, Benshen, Houxi, speech area 1, speech area 2 and speech area 3. Acupuncture method and treatment course: select disposable sterile acupuncture needle (specification: 0.30 mm × 40 mm). Put the child in a sitting position, and the family members should properly fix the head. After cognitive disinfection, the needle should be rapidly inserted at an angle of 30 degrees with the scalp. After the needle tip reaches under the cap like aponeurosis, push the needle parallel to the scalp for 1-1.5 inches, and then twist the needle. The twisting angle is 180 °-360 °, and the frequency is about 200 times / min. after continuous twisting for 2-3 minutes, the needle should be retained for 1 hour, and the needle should be rotated every 15-20 minutes during the needle retention period. Electroacupuncture can be used instead of hand twisting. The waveform should be density wave. The current intensity should be tolerated by children. The needle tip of Houxi point was punctured towards Laogong point, and the method of flat reinforcing and flat reducing was adopted. Five times a week, once every other day for the weak, 10 times as a course of treatment, with an interval of 7-10 days, a total of 3 months as a course of treatment.

2.3 Observation indexes

Observe and compare the results of children's language development quotient, language and social score in Gesell child development scale and language milestone skill score in vb-mapp.

The S-S test method was used to measure the language development quotient, which was effective: the language function was significantly improved, at least two stages; Effective: the language function is significantly improved by one stage; Invalid: no significant improvement in language function. Total effective rate = (markedly effective + effective) / total number of cases × 100%.

Gesell development scale was used to measure language and social scores [4-5]. According to the development quotient (DQ), $DQ \geq 86$ is normal; $76 \leq DQ \leq 85$, edge state; $55 \leq DQ \leq 75$, mild growth retardation; $40 \leq DQ \leq 54$, moderate growth retardation; $25 \leq DQ \leq 39$, severe developmental retardation; $DQ < 25$, extremely severe developmental delay.

The language development and related skills of children were measured by the language behavior milestone evaluation method. There are 9 kinds of skills, including request making, naming, listener response, listener discrimination training (lrffc) of functional characteristics category, visual perception and sample matching, social behavior and social games, classroom rules and collective skills, spontaneous voice behavior, and dialogue. There are three options for scoring each skill, namely 0, 1 / 2, and 1. The higher the score, the better the language communication ability. The curative effect is divided into three levels: markedly effective, effective and ineffective. Markedly effective: the score increased by more than 25% after treatment; Effective: the score increased by 1% - 25% after treatment; Invalid: the score did not improve after treatment.

2.4 Statistical method

SPSS 21.0 software was used for data analysis, and the difference was statistically significant ($p < 0.05$).

3. Results

The total effective rate of the observation group was 90%, which was significantly higher than that of the control group ($P < 0.05$). (See Table 1)

Gesell development scale language and personal social function comparison, after treatment, the language and personal social ability scores of the two groups were increased, and the observation was significantly higher than that of the control group ($P < 0.05$). (See Table 2)

Vb-mapp scores were compared, and the observation group was significantly higher than the control group in terms of requirements, naming, listener response, listener discrimination training of functional characteristics, visual perception and sample matching, social behavior and social games, classroom rules and collective skills, spontaneous voice behavior, dialogue and other language communication related skills ($P < 0.05$). (See Table 3).

Table 1: Comparison of clinical efficacy between the two groups by S-S examination [n (%)]

Group	markedly effective	effective	ineffective	total effective rate
Control group (n = 60)	15 (37.50)	16 (40.00)	9 (22.50)	31 (77.50)
Observation group (n = 60)	21 (52.50)	15 (37.50)	4 (10.00)	36 (90.00)
P	0.023	0.062	0.031	0.024

Table 2: Comparison of Gesell language and personal social project scores between the two groups

Item category	group is effective	and invalid
Language control group	4.10 ± 0.23	6.12 ± 0.35
Observation group	4.19 ± 0.18	6.24 ± 0.32
Personal social control group	5.40 ± 0.56	6.72 ± 0.25
The observation group was	6.74 ± 0.69	7.89 ± 0.43

Compared with before treatment, $P < 0.05$; Compared with the control group, $P < 0.05$

Table 3: Comparison of language milestone scores between the two groups [n (%)]

Skill items	effective	effective	invalid	total effective
Control group	observation group	control group	observation group	control group
observation group	control group	observation group	control group	observation group
Requests	91023268432 (80.0)	36 (90.0)		
Name	81625197533 (82.5)	35 (87.5)		
Listener response	91712209321 (52.5)	37 (92.5)		
Lrffc	10162505435 (87.5)	36 (90.0)		
Visual perception / pairing	11182619337 (92.5)	37 (92.5)		
Social behavior / games	915247333 (82.5)	37 (92.5)		
Classroom / collective rules	131523436 (90.0)	36 (90.0)		
Spontaneous speech	111722207333 (82.5)	37 (92.5)		
Dialogue	61025249631 (77.5)	34 (85.0)		
P	※	0.036		

Note: Lrffc (listener discrimination training of functional characteristics category) * $p < 0.05$

4. Discussion

Mental retardation, also known as mental retardation, is one of the common causes of disability in childhood. The global prevalence rate is about 1%, and the prevalence rate of severe mental retardation is about 0.6% [6]. Therefore, the early diagnosis, evaluation and intervention of temporary mental retardation (PIDD) are particularly important. The causes of mental retardation include physiological and medical reasons, social reasons, and behavioral and educational reasons. The understanding of mental retardation has gradually shifted from the medical model to the ecological model, that is, mental retardation is due to the structure and dysfunction of the nervous system, which limits individual activities and participation, and requires the environment to provide comprehensive, extensive, limited and intermittent support [7]. According to this ecological model, PIDD is the result of the interaction between personal defects and environmental conditions, so the treatment of PIDD should take comprehensive clinical and rehabilitation intervention.

The brain is the material basis of intelligence. PIDD language communication problems are closely related to brain organic damage or incomplete brain development. Mental retardation belongs to the category of "five delays and five soft" and "dementia" in traditional Chinese medicine [8]. From the perspective of meridian circulation, the governor vessel enters the collaterals and brain, and its branches run through the heart, collaterals and kidney. "The brain is the house of the primordial gods", "the heart governs the mind", "the kidney governs the storage of essence, and the growth and development". Therefore, the Tongdu Qiyu acupuncture method is mainly used to treat PIDD at governor vessel points. Shenting acupoint is a place where the governor vessel meets with the foot Taiyang and Yangming meridians, where the "God" and the Qi of the heaven also "court" gather and disperse. The ascending Qi of the governor vessel gathers here. Acupuncture has the effect of clearing the head, dispersing the wind, and calming the nerves. Baihui acupoint, also known as "three yang and five Hui", is where the Qi and blood of the five zang organs and six Fu organs are located. Acupuncture has the effect of activating everything, refreshing the brain and opening the orifices. Naohu acupoint is the intersection of Du Meridian and foot Taiyang meridian, and the gateway to the brain. Acupuncture has the effects of calming the wind and opening orifices, dispersing the wind and unblocking collaterals, and reducing turbidity and elevating clearness for nutrients entering and leaving the brain. This divine acupoint: this, the root, the meaning of God, mind and spirit. It is located in the most advanced part of the frontal lobe of the brain. According to the Inner Canon of the Yellow Emperor, the essence of the spirit: "all needling methods must be based on the essence of the spirit first." this acupoint is named after the essence of the spirit, which shows the importance of this acupoint in the treatment of mental disorders. At the same time, the acupoint belongs to the gallbladder meridian of foot Shaoyang, which has the effect of calming nerves, calming nerves, calming wind and unblocking collaterals. Houxi is one of the intersection points of the eight meridians. Acupuncture at Houxi is used to TongLao palace, which has the purpose of treating both the heart and brain. Secondly, the Tongdu Qiyu acupuncture method includes three language areas. Scalp acupuncture is used to stimulate the corresponding functional areas to promote the increase of blood flow perfusion in the corresponding brain areas, increase the local nutrition of the brain, so as to promote brain development, which is conducive to the improvement of language communication ability [9]. At the same time, traditional Chinese medicine emphasizes the overall concept and dialectical treatment. According to the syndrome characteristics or complications of children, giving appropriate acupoints can play a better effect.

Language is a unique communication tool of human society. When evaluating and intervening the language function of children with PIDD, we should make an overall understanding of it, not only to cultivate their applicability, but also to adjust their own way of interaction to reflect the

characteristics of environmental support. On the one hand, the use of language behavior teaching inherits the training methods of individual round language teaching on the basic listener ability and listener discrimination ability, and also emphasizes the various listener functions, functional characteristics and types of listener discrimination, as well as the natural transformation between the various functions of listener ability and speaker ability. At the same time, the language behavior teaching emphasizes the joint control method to help children complete the language behavior of difficult or multi-step instructions. For example, the teacher said, "there are three kinds of fruits on the plate. Give the apple to the teacher, the banana to the mother, and the orange to me.". The teacher can teach the child to take the fruit and say "give the banana to the teacher, give the grape to the mother, and leave the apple to me". In this way, the children's oral language can help control their listener's behavior and form a dual control with the teacher's instructions. Here, dual control creates two conditions, not just one, in order to elicit the correct reaction of the child. Similarly, the application of dual control in speaking behavior training can help children pay attention to the dual stimuli of objects and language, so as to effectively solve the problems that children with mental retardation answer. Experiments have proved that language behavior teaching can help children execute multi-step instructions with good results, and provide a useful structure for children's language communication in the process of training.

In this study, Tongdu Qiyu acupuncture combined with language behavior teaching was used to improve the language communication function of temporary mental retardation. After treatment, the total effective rate of the observation group was significantly higher ($P < 0.05$), suggesting that Tongdu Qiyu acupuncture combined with language behavior teaching can improve the therapeutic effect. The scores of language development quotient, language and social scores in Gesell child development scale, requirements in vb-mapp language milestone assessment, naming, listener response, listener discrimination ability training of functional characteristic categories, visual perception and sample matching, social behavior and social games, classroom rules and collective skills, spontaneous voice behavior, dialogue and other language communication related skills in the two groups were significantly increased ($P < 0.05$), And the observation group increased significantly ($P < 0.05$).

To sum up, Tongdu Qiyu acupuncture combined with language behavior teaching in the treatment of children with temporary mental retardation (PIDD) is an effective combination of traditional Chinese medicine and modern rehabilitation training. The therapy has sufficient theoretical basis, significant clinical efficacy, and can achieve the purpose of treating both symptoms and signs. It is worth further research and promotion in clinical practice, expanding the sample size and observing the long-term efficacy.

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