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Treatment of 140 cerebral palsied children with a combined method based on traditional Chinese medicine (TCM) and western medicine

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Abstract: Objective: To observe and evaluate a method that is effective and practical for treatment of cerebral palsied (CP) children in China. Method: The patient's age and disease type and individual specific conditions were considered in choosing therapy methods accordingly: Chinese herbs, acupuncture, auricular seed pressure, point finger pressing, massage, orthopedic hand manipulation, physiotherapy, occupational therapy, language therapy, etc. Meanwhile we created a new CP treatment model that combines hospitalized treatment with family therapy. Results: The majority of CP patients improved greatly in motor and social adaptation capacities after treatment. Wilcoxon paired rank sum test analysis showed that there were significant differences between the data before and after treatment (P<0.01). Conclusion: This combined therapy method, based on traditional Chinese medicine and western medicine plus family supplemental therapy, is an effective and practical treatment strategy for CP children in China.

Key words: Traditional Chinese medicine (TCM) combined with western medicine, Therapy, Childhood cerebral palsy
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INTRODUCTION

Childhood cerebral palsy is a major disease resulting in body disabilities among children. The incidence of cerebral palsy is about 0.2% (Bhushan *et al*., 1993), for which there is no specific treatment yet. With the development of perinatal medicine, the mortality of neonates has decreased dramatically, although the morbidity of childhood cerebral palsy, has shown rising trend (Stanley, 1994). A cerebral palsied child brings heavy economic and mental burdens to his or her family. Rehabilitation will be a long and tedious process, and requires the parents of the sick child to devote tremendous energy in the spiritual and material sense, to take care of the patient. How to bring down the costs for CP rehabilitation effectively and to improve the outcome is our ultimate objective. In the past ten years, we adopted a combined treatment package based on traditional Chinese medicine and western medicine, hospital rehabilitation supplemented by family recuperation, to treat and help the sick to recover. This paper focuses on the effectiveness of this method of treatment of 140 CP patients from whom we collected relatively complete data. Our research showed that most of the patients improved greatly in motor ability and social adaptability. We came to the conclusion that this method currently provides rather good results and is worthwhile implementing nationwide.

We started the research on effective rehabilitation treatment for childhood cerebral palsy in 1991. Before that, we mainly adopted traditional Chinese medicine therapy method, combined with some simple functional training (Zhou, 1993). Gradually modern rehabilitation methods and orthopedic hand manipulations were introduced as our research work

continued. In this research and afterward, TCM and modern rehabilitation therapy shared the same important role in CP treatment in our facility. During the same period, we also gave the patients' parents many instructive lessons on recovery at home that yielded obvious good results.

DATA AND METHODS

Patients

This research covered 140 CP children, 92 boys and 48 girls, who received more than six treatment courses (each course consisted of ten separate treatments) in the outpatient department of our hospital from 1991 to 1998. During this period, we provided treatments for more than 140 patients, but only the above 140 patients received six or more treatment courses. The others could not continue their treatment for economic or other reasons.

Patient's age: from 2 months to 14 years old. The average age was 2.65±1.97 years old.

Diagnostic criterion

According to the diagnosis and classification standards revised during the Chinese national childhood CP symposia in July 1988 (Lin, 1989), all the cases were classified into the following types: spasm type, 67.9% (95/140); athetosis type, 15% (21/140); rigidity type, 0.7% (1/140); incoordination type, 2.1% (3/140); hypomyotonia type, 2.1% (3/140); mixed type, 4.3% (6/140); and unidentified type, 7.9% (11/140).

Treatment methods

Chinese herbs, acupuncture, auricular seed pressure, massage, orthopedic hand manipulation, physiotherapy, occupational therapy, and language therapy. Among them two to six methods were selected for synergic reinforced treatment based on patient's different age, diagnosis and classification.

1. Age consideration:

If the patient was younger than one year, massage and orthopedic hand manipulation and physiotherapy were applied.

If the patient was older than one year, massage and point finger pressing, orthopedic hand manipulation, physiotherapy, acupuncture, and physiotherapy were applied.

If the patient was older than two years, massage, point finger pressing, orthopedic hand manipulation, physiotherapy, acupuncture, physiotherapy, Chinese herbs, occupational therapy and language therapy were applied.

2. Considerations for diagnosis and classification:

Spasm type: acupuncture in addition to orthopedic hand manipulation was often used; physiotherapy was preferred.

Athetosis type: acupuncture with physiotherapy, mainly on balance and stability were preferred. Occupational therapy and language therapy were also often used.

Mixed type: all therapy methods mentioned above were considered.

These CP children received ten separate treatments each month in our hospital. During treatment, we also offered parents concentrated lectures, visual presentation by means of video compact disks, educational booklets and customized demonstration for each patient's home rehabilitation procedures by our professional staff, so that during the interval of hospital treatment parents could effectively help their children to recover at home. Six months was considered as one major course of treatment. Both motor and social adaptation capacity comparisons were made after the major course of treatment.

Statistics

The comparison data were inputted into the database based on Foxpro2.5 software. Use of SPSS statistics software package and Wilcoxon rank sum test method for paired data yielded the statistical analysis for treatment effectiveness.

RESULTS

Therapeutic results evaluation: At the very beginning, we already worked out the motor function evaluation and social adaptation ability assessment tables for CP patients. We designed those forms according to the normal development rules for child nervous system and many quantitative tables for child intelligence development. The former evaluation includes raising head, turning over, co-operative ac-

tions, sitting, creeping, genuflecting, standing-up, standing, walking, going upstairs and downstairs repeatedly, ten items all together, the total score being 100 points. The social adaptation ability assessment table includes eating, gargling washing, undressing, relieving the bowels by himself or herself, appliance handling, speaking, calculating, cognition, comprehending capacity, social activity capacity. 11 items all together, total score 110 points, 10 points for each item. The patient would get 0 points for doing nothing; or get 10 points for finishing it successfully. They get 2.5 points, 5 points, and 7.5 points, respectively, according to the performance of finishing it. Finally we compared before treatment data with after treatment data.

The majority of CP children obviously improved in motor and social adaptation capacities after treatment (Table 1). Among them, 139 cases (99.3%) improved in motor capacity while only 1 (0.7%) remained the same; 133 cases (95%) improved in social adaptation capacity, 6 cases (4.3%) showed retrogression and 1 case remained unchanged. The Wilcoxon rank sum test analysis results showed that there were significant differences between them (P<0.01) (Table 2). The sum of median and 95% confidence limit both before and after treatment are shown too (Fig.1).

DISCUSSION

Cerebral palsy is not an independent isolated disease. It includes many non-advancing movement dysfunction of nerve center type resulting from brain injuries, which have many different causes. Currently there is no specific treatment method for cerebral palsy. The earliest description of CP and corresponding treatment strategy was published by an English orthopedist Dr. William John Little (Li, 2000). He reported a patient case of convulsion type palsy and his surgical solution for treatment. More than one hundred years afterward, surgical therapy was the standard treatment for CP with unsatisfactory results. Since the 1970's, diverse physiotherapy became a widely accepted effective alternative in CP

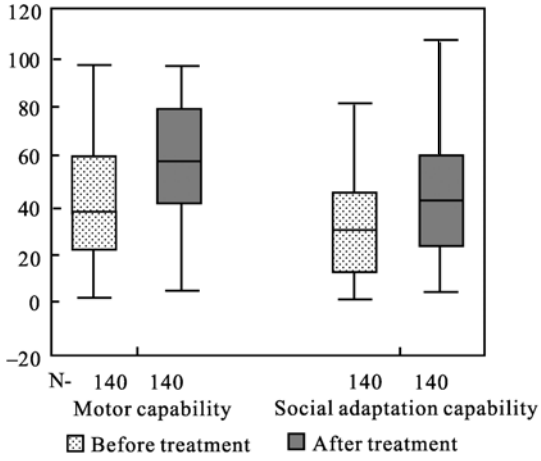

Fig.1 Median, 95% confidence limit and dispersion distribution of motor and social adaptation capacity before and after treatment

Table 1 The change of motor and social adaptive abilities of 140 patients after treatment

Item	Improved cases and percentage (%)		Deteriorated cases and percentage (%)		Unchanged cases and percentage (%)	
Motor capacity	139	99.3	0	0	1	0.7
Social adaptation capacity	133	95.0	6	4.3	1	0.7

Table 2 Comparison and analysis on motor and social adaptive ability of 140 patients before and after treatment

Item	Motor capacity			Social adaptation capacity		
	Median	Maximum	Minimum	Median	Maximum	Minimum
Before treatment	38.00	3.00	97.00	28.25	3.00	100.00
After treatment	58.50	6.00	98.00	43.00	5.00	108.00
Deviation	16.00	0.00	63.00	10.25	−1.00	36.00
Z	−10.229			−10.040		
P	<0.001			<0.001		

treatment. Meanwhile, traditional Chinese medicine prevailed in Asia for more than three thousand years, certain type of herbs and acupuncture and massage were found to have positive treatment effects for CP patients (Chen, 1988). Furthermore, TCM therapy package involves only low treatment fee, is simple to carry out and is patient friendly. TCM's role in fighting CP is now drawing more and more attention from all over the world. We have been adopting a combined therapy strategy based on TCM and modern rehabilitation medicine, and pushing it one step further into family supplemental recovery for more than 12 years. Our research proved that our combined therapy strategy of using three medical methods for treating CP patients is both effective and practical in China.

CONCLUSION

This combined therapy method, which is based on traditional Chinese medicine and western medicine plus family supplemental therapy, is a currently effective yet practical treatment strategy for CP children in China. It is believed that if it becomes popular, the majority of patients will surely benefit from it.

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