

Efficacy of Pharmacopuncture for Treating Children with Physical Disabilities in Uzbekistan

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Key Words

ankle joint disorders, Cerebrolysin, neuromotor system disease, pharmacopuncture, physical disability, scoliosis

Abstract

Objective: This research was performed to investigate the efficacy of complex rehabilitation combined with pharmacopuncture treatment for the children with neuromotor system diseases.

Methods: Fifty (50) patients aged from 5 to 15 yr old were compared. Twenty (20) patients received conventional treatments and complex rehabilitation as a control group, and fifty (50) patients received complex rehabilitation with pharmacopuncture. At their first visits, the patients had checkups and neurological scales, and after 10 days of pharmacopuncture treatments and 55 days of rehabilitation, they also took neurological scales. We studied the pre and post effects of the treatment group.

Results: The number of patients with ankle joint disorder and contracture, knee joint contracture, steppage, horse hoof, shoulder weakness and contracture, radio-carpal joint disorder and contracture, arm hypotrophy, arm atrophy, leg hypotrophy and total atrophy decreased after treatments.

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Conclusion: This study showed the efficacy of pharmacopuncture combined with complex rehabilitation for the treatment of neuromotor system diseases.

1. Introduction

The physical disability of children is considered to be a medico-social problem for the whole of society [1-6]. Physical disabilities (PDs) are a leading cause of impaired quality of life and functioning [7]. In Canada, 6.3% of children aged 0-9 yr have some sort of disability, either physical, cognitive or both [8]. Physical disabilities may include musculoskeletal problems, neuromuscular problems or inherited problems. Such disorders can be caused by inflammation of the nervous system, poliomyelitis, defects of the spinal cord, syringomyelia, neurofibromatose outgrowth in the spinal cord, injury to the brachial plexus during birth (obstetric paralysis), encephalitis, etc. Children with PDs require early detection of the diseases, early treatment, and rehabilitation. The treatment and the rehabilitation should maximize their functioning both physically and mentally.

The family members of children with PDs look for a method to treat their problems, including complementary and alternative therapies, as well as conventional treatment and rehabilitation [9]. The

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economic burden for family with children who have disabilities is growing. A study in South India showed the mean expenditure of families with a severely disabled child was \$254 per year, which is significantly higher than the corresponding expenditure of \$181 per year of families with a normal child [10]. Also, in China, compared with normal children, the burdens of raising children with disabilities were increased by 19582.4 RMB (RenMinBi, Chinese currency) per year (autism), 16410.1 RMB per year (physical disability), 6391.0 RMB per year (mental disability) [11].

In medical scientific manuals, children with disorders of the neuromotor system, but with no proper studies of mechanic changes in their muscles, tend to have progressive pathological processes. Initially, these children need orthopedic aids, followed by wheelchairs and they will gradually be bedridden forever. This means that new ways of medical treatment need to be found and that these new methods must have wide-spread application in practice. Children with PDs are in need of special medical, social and educational aid. The treatment of patients with neuromotor disorders should be conducted during a long period of rehabilitation, along with the application of physico-mechanic therapy and complex orthopedic treatment, thus leading to a significant recovery.

Children aged from 5 to 15 yr with neuromotor impairments are thought to be treated quite successfully during the process of rehabilitation by applying pharmacopuncture [12-16]. Pharmacopuncture in Uzbekistan is regarded as a new method, but it has much potential for treating many difficult and chronic neurological diseases. Thus, we show the effects of pharmacopuncture of cerebrolysin on neuromotor diseases.

2. Patients and Methods

2.1. Patients

Fifty children patients aged from 5 to 15 yr with neuromotor system diseases visited the 'Republic Children's Rehabilitation Center with diseases of bearing movable systems' and were under its supervision. Twenty patients received conventional treatments as a control group, and Fifty patients received Cerebrolysin®(Ever Neuro Pharma GmbH, Unterach am Attersee, Austria) pharmacopuncture as a treatment group. A 55-day complex rehabilitation was given to both groups. We evaluated the status of the patients twice: the first visit and the 55th-day of complex rehabilitation. In this article, we show the results for the treatment group (n = 50).

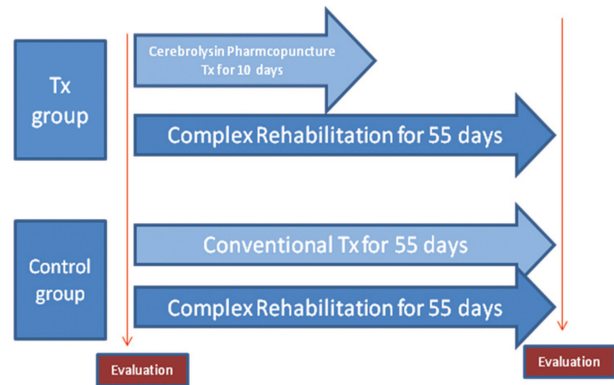


Figure 1 Experimental flowchart.

2.2. Treatment Methods

We applied pharmacopuncture using Cerebrolysin and acupoints were Hapmok (LI4), Yanggye (LI5), Yanggok (SI5), Yangno (SI6), Sadok (TE9), Jigeong (SI7), Gokji (LI11), Bino (LI14), Jungbu (LU1), Gyeonjeong (GB21), Gyeongjeong (SI9), Pungji (GB20), Daejeo (BL11), Pungmun (BL12), and 4 Ashi points around clavicles for upper extremity paralysis. The acupoints were Samchosu (BL22), Sinsu (BL23), Gihaesu (BL24), Daejangsu (BL25), Gwanwonsu (BL26), Seungbu (BL36), Eunmun (BL37), Wiyang (BL39), Habyang (BL55), Seunggeun (BL56), Seungsang (BL57), Biyang (BL58), Hyeolhae (SP10), Yanggu (ST34), Joksamni (ST36), Haegye (ST41), Eumneungcheon (SP9), Gollyun (BL60), Boksam (BL61), Sinmaek (BL62), Taegye (KI3), Daejong (KI4), Sucheon (KI5), Johae (KI6), Guheo (GB40) for lower extremity paralysis. Acupoints were the ipsilateral side to the lesion side. Cerebrolysin, 0.1 ml per acupoint, was used. For one session of treatment, 5-10 acupoints were selected, so the amount of Cerebrolysin was a minimum of 0.5 ml and a maximum of 2.0 ml. Acupoints were changed everyday. Cerebrolysin pharmacopuncture treatment was applied on 10 consecutive days.

3. Results

Fifty patients were in the treatment group. 22 of them were girls (44%) and 28 were boys (56%), the age range was 5 to 15 yr (Fig. 2). Thirty-two of the patients had brachial plexus problems (64%). Of those 32 patients, 15 had upper interlacement injuries (47%) and 8 had lower interlacement injuries (25%) and 9 had total injuries (28%). Lower monoparesis was detected among 28 patients (56%): 16 of the 28 patients had acroneuropathy (57%), 10 had neural infection of the lower paresis (36%), and 2 had

poliomyelitis caused by vaccination (7%). Scoliosis was found in 22 patients: 10 of them had II-degree scoliosis (45.5%) and 12 of them had I-degree scoliosis (54.5%). Femoral joint disorder was found in 20 of the 50 patients

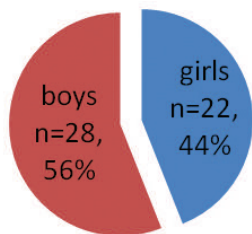


Figure 2 Sex distribution.

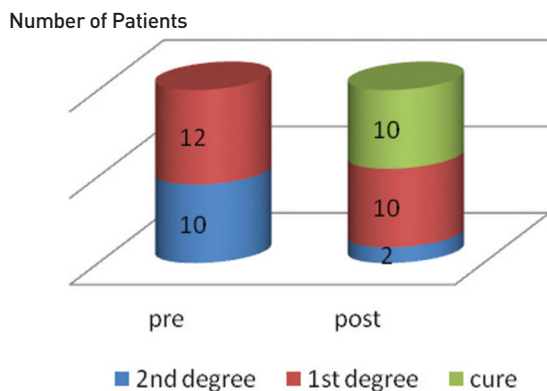


Figure 3 Improvement of scoliosis.

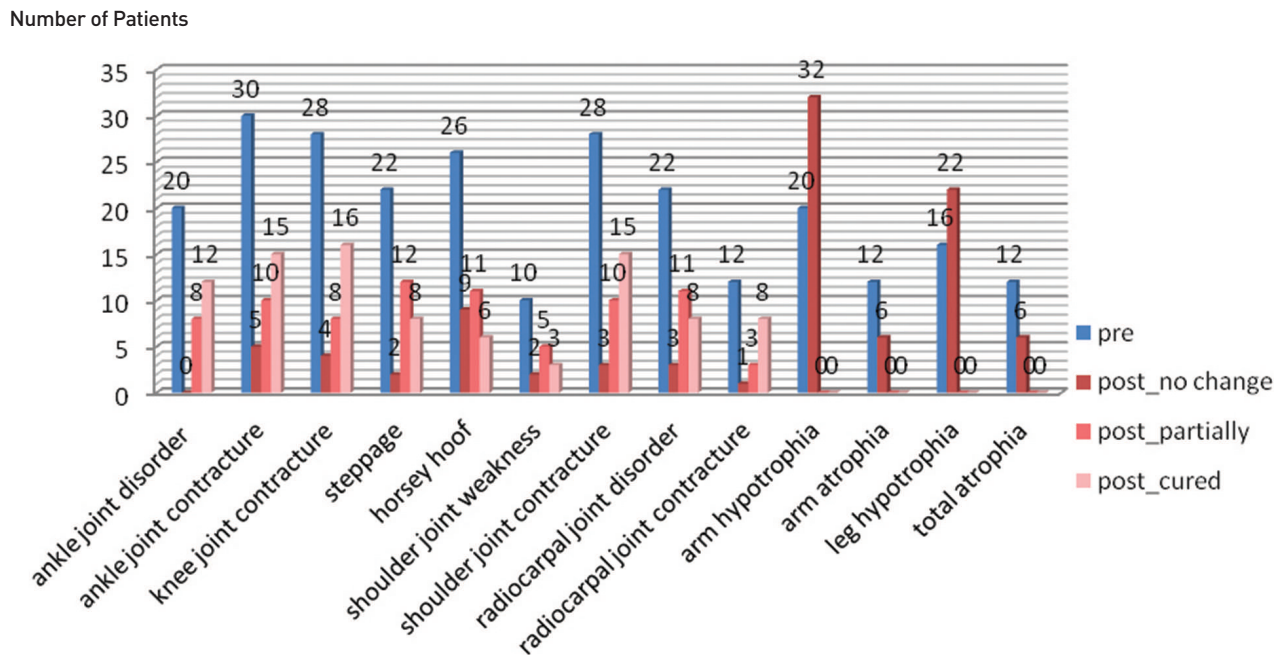


Figure 4 Symptom change between pre- and post-treatment.

(40%) and 30 of the 50 patients had ankle joint contracture (60%), 28 had knee joint contracture (56%), 22 had steppage (44%), and 26 had horsey hoof (52%). Weakness of shoulder joint was detected in 10 of the 50 patients (20%). Also, 28 of the 50 patients had shoulder joint contracture (56%), 29 had elbow joint contracture (58%), 22 had radiocarpal joint disorder (44%), and 12 had radiocarpal joint contracture (24%). Hypotrophy of the arms was found in 20 of the 50 patients (40%), atrophy in 12 (24%), hypotrophy of the legs in 16 (32%), and total atrophy in 12 (24%).

3. 1. Improvement of treatment group after a 55-day treatment

For scoliosis, there were 10 patients with 2nd degree scoliosis and 12 patients with 1st degree scoliosis. After treatments, there were 2 patients with 2nd degree scoliosis and 10 patients with 1st degree scoliosis. Ten patients had been cured (Fig. 3)

Ankle joint disorders were found in 20 patients before the treatment. After treatment, 12 patients were totally cured, and partial disorder was observed in 8 patients.

Ankle joint contractures were found in 30 patients before the treatment. In 15 patients, fixation was completely successful, in 10 patients the ankle joint was partially fixed, and in 5 patients no change was seen (Fig. 4).

Knee joint contracture was found in 28 patients before the treatment and was cured in 16 patients. Eight patients were treated with partial success, and in 4 patients, stable contracture was seen with no change (Fig. 4).

Steppage was found in 22 patients before the treatment. In 6 patients, horse hoof was cured, in 11 patients, partial recovery was observed, and in 9 patients, the disease was left stable (Fig. 4).

Shoulder joint disorder or weakness was found in 10 patients before the treatment. Three patients were cured, 5 patients were partially cured, and 2 patients showed no change. Shoulder joint contracture was found in 28 patients before the treatment. In 15 patients, it was fully cured, in 10, it was partially cured, and 3 showed no change (Fig. 4).

Radiocarpal joint disorder was found in 22 patients before the treatment, and it was cured in 8 patients. Eleven patients recovered partially, and 3 showed no change. Radiocarpal joint contracture was found in 12 patients before the treatment. In 8 patients, it was cured, in 3, it was partially cured, and in 1, it showed no change (Fig. 4).

Hypotrophia of the arms was found in 32 patients before the treatment, atrophia in 6, leg/foot hypotrophia in 22, and total atrophia in 6 (Fig. 4).

4. Discussion

Pharmacopuncture is a new method for doctors in another countries. Pharmacopuncture is regarded as a unique method that uses acupuncture points and herb medicines, and it can be used to treat all kinds of diseases, such as internal medicine problems, gynecological problems, otolaryngological problems, neuropsychiatric problems, neuromotor problems and musculoskeletal problems. In Uzbekistan, many doctors have been using Cerebrolysin via intravenous and intramuscular injection. Also, some doctors have been using acupuncture with the patients. In our rehabilitation center, we developed a new method, like pharmacopuncture with Cerebrolysin. In the past in Uzbekistan, we used herb medicine to treat patients, but nowadays few doctors use herb medicine. We have heard that a few doctors have used pharmacopuncture with herb medicine but there are no articles or research on this topic. We use injection materials made in pharmaceutical companies.

We applied pharmacopuncture with Cerebrolysin to children with neuromotor impairments [16-18]. The effect of pharmacopuncture with Cerebrolysin was regarded as big compared to the effect of Cerebrolysin injected intravenously. The problem was the expense when we used Cerebrolysin injected intravenously, the expense of treatment was large. However, this study, although we used just a small amount of Cerebrolysin, a 'nano-dose', its effect was very good, thus, we can say

that this new method is very economical. Pharmacopuncture with Cerebrolysin has several advantages. It is much less painful. If we had used another type of injection material, it could have pain to in the children. Also, Cerebrolysin has many microelements, neuropeptides, and proteins that are very similar to human body fluids and that can produce neuron cells that proliferate in parts of dendrites, axons and neuroglia. We hypothesize that Cerebrolysin has a fast transdermal conduction effect, can get into the skin and can arrive at the target organ fast.

We can make a few recommendations on using pharmacopuncture with Cerebrolysin. This method is a new method using acupuncture points and a Western-style drug, so it is a combined method using Oriental medicine and Western medicine. Thus, we recommend that the pharmaceutical company write the administration method for pharmacopuncture in the instructions for products like Cerebrolysin. For the neurological doctors, we suggest that this new method can produce very good effects for patients with neuromotor impairments, so doctors should use this method more actively.

However, this study has several limitations. We did not survey the morbidity time, and we did not classify the patients according to the lesions. Until now, this new method could not be applied to patients with neuromotor impairments. Thus, as a basic step, we hope this study will stimulate more research in this neurological area.

5. Conclusion

Application of complex medical conventional rehabilitation methods in the treatment of children with diseases of the neuromotor system have not been efficient, but the application of medical rehabilitation in combination with pharmacopuncture has shown significantly better clinical and economical results in the treatment of children with neuromotor system.

Acknowledgments

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