Original Article

The effect of adding homeopathic treatment to rehabilitation on abnormal reflexes of children with spastic cerebral palsy

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Objectives: Cerebral palsy (CP) is a static encephalopathy with abnormal reflexes that cause motor developmental delay. In addition to conventional methods, complementary medicine like homeopathy has been used in treatment of neuro-developmental disorders. This study has been done to determine the effect of adding homeopathic treatment to rehabilitation on abnormal reflexes of children with spastic cerebral palsy.

Methods: In this study by using minimization technique subjects were divided to case and control groups. The routine rehabilitation techniques were done in 4 months in both groups. The control group received placebo and the case group received homeopathy drugs. Primitive, spinal, brain stem, midbrain, cortical reflexes and automatic movement reaction in the beginning and the end of four months were assessed and compared in two groups. Data collected by assessment forms, direct observations and examinations.

Results: The average age in case and control groups was 28, 28.4 months respectively. *Primitive reflexes:* Palmar Grasp reflex in 14.3% of cases has improved but in control group has no differences (*PV*=0.681). Plantar Grasp and walking reflex in two groups before and after intervention have no differences (*PV*=1). Moro reflex in 28.6% of cases and 11.1% of controls improved (*PV*=0.408).

Conclusions: Regarding to proved effects of homeopathy mentioned in different articles on physical status of children with CP as well as executive limitations, it is not possible to reject the effects of homeopathy on reflexes of children with CP.As homeopathy is young in Iran, it is recommended to make researches about effects of homeopathy on neurodevelopmental disorders.

Key Words: Spastic cerebral palsy, Abnormal reflexes, Homeopathy**.**

Introduction:

Cerebral palsy (CP) is an approximately common disorder with an estimated prevalence of 2-4/1000 population. Although its main causes are birth trauma, asphyxia, and prematurity but during the last 2-3 decades in spite of considerable advances in obstetric and neonatal care, there has been virtually no changes in the incidence of CP. Children with CP have abnormal reflexes that cause abnormal posture and movements and motor delay. Some of these reflexes should be omitted or attenuated in determined age, so facilitate achievement a motor milestone in that age (1, 2).

In order to treat CP a team containing different specialists and therapists as well as parents cooperates together. There are different medical and rehabilitation interventions. These interventions include occupational therapy, physical therapy, speech therapy,

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use of muscle relaxants (dantrolen, baclofen, and diazepam), boutox injection in spastic muscles and different surgery techniques (1, 2). Besides the above interventions complementary medicine like homeopathy has been used in treatment of pediatric neurodevelopmental disorders(3, 4). Complementary medicine use is widespread in children; professionals should be aware of this, be aware of possible side effects/interactions and encourage adherence to effective conventional treatments where important (4). Complementary medicine like homeopathy, was used mainly because word-of-mouth recommendation, dissatisfaction with conventional medicine and fear of side effects of conventional treatments (3, 4).

The word Homeopathy (or Homoeopathy) is derived from the Greek words homoios, meaning like or similar, and pathos, meaning suffering or disease. (5) The theory of homeopathy was developed by the Saxon physician Samuel Hahnemann (1755–1843) and first published in 1796 (6). Homeopathy is a system of medicine based on the principle that a disease with a given set of symptoms can be cured by a medicine (remedy) which is known to produce a similar set of symptoms. This principle where "like cures like" is called "The Law of Similars" and is the foundation of Homeopathic Medicine, meaning *" Let like be treated by like"* (7). To give an example of the simile principle, the symptoms and signs of acute arsenic poisoning are very similar to the symptoms seen in certain cases of gastroenteritis. And true to the principle of simile, Homeopathic potencies of Arcenicum (arsenic) are used to effectively treat gastroenteritis. (8)

Homeopathic medicine and the principle of simile was protected by law by the British Parliament, and later protected by the United States Congress as a practical and legitimate method of medical practice.

Today, unlike nutritional substances, Homeopathic substances are considered medicines, recognized as powerful entities which allow specific medical claims to be made about them. (5)

Regarding to considerable improvement in some cases of CP children with homeopathy, we decided to determine the effect of this unconventional treatment on abnormal reflexes of children with CP.

Materials and Methods:

This study was a clinical trial-double blind-placebo-controlled study that was conducted during 2004. The subjects were recruited from a clinic (Developmental Disorder Center of Saba) in Tehran, Iran that is affiliated with University of Social Welfare and Rehabilitation Sciences (USWRS). The study had the approval of Ethic Committee, The USWRS. Parents of each patient gave informed consents.

Inclusion criteria were 1-5 years of age, mild to moderate spastic CP with abnormal reflexes and family cooperation. Exclusion criteria were severe mental retardation (IQ<40), genetic disorders like Down syndrome, convulsion and sensory disorders like blindness and deafness. In this study 24 subjects, by using minimization technique, were divided to two groups: case and control. The groups were selected based on age, sex and severity of CP. The number of samples in each group was 12, 3 losses in control and 5 in case group, because of transport problems and aspiration pneumonia. The pediatrician and an occupational therapist making the pre- and post treatment assessments of the patient and the different occupational therapist gave rehabilitation and a homeopath physician gave the drugs. The drugs were used in this study were Silica, Lycopodium- Clavatum, Phosphorus (in many patients), Pulsatila, Natrum-Muraticum, Opium, Gelsemium, Causticum, Calcarea Phosphorica, and Calcarea Carbonica. All people saw the homeopathic physician and he prescribed homeopathic medication for all patients and yet only half were given placebo. In first visit the homeopath physician determined the drug for individual patient and in every visit few globules of one drug were dissolved in 10 cc of water and were given to the patient, for use 2.5cc per week orally until the next visit. Both groups were assessed before treatment, 1, 2 and 3 months later and received placebo or homeopathic drugs blindly. Case and control groups were received routine occupational therapy for 4 months.

Primitive, spinal, brain stem, midbrain, cortical reflexes and automatic movement reaction in the beginning and the end of four months were assessed. Data was collected by physical examination, direct observation and assessment of subjects based on check lists.

According to distribution of variables parametric and non-parametric tests were used in order to analysis data. The data were analyzed using SPSS statistical software (11^{th} version), t-test, X^2 and Man-Whitney tests. Statistical significant was set at p=0.05.

Results:

Nine subjects in control group and 7 in case group

were studied. The average age in case and control groups were 28.0(SD=12. 2), 28.4(SD=10.1) months, respectively (PV=0.470).

Primitive reflexes: Although Palmar grasp reflex in 14.3% (1 out of 7) of cases has improved and in control group has no changes but there were no statistically significant differences in 2 groups (*PV*=0.681) (Table 1). Plantar grasp and walking reflexes in two groups before and after intervention have no changes. There were no statistically significant differences (*PV*=1). Moro reflex in 28.6% (2 out of 7) of cases improved after intervention but in control 11.1% (1 out of 9) improved and 11.1% became worse There were no statistically significant differences (*PV*=0.408) (Table 1).

Spinal level: Crossed extension reflex in 28.6% (2 out of 7) of cases has improved but in 22.2% (2 out of 9) of controls has become worse. There were no statistically significant differences (*PV*=0.142) (Table 2).

Brain stem level: Tonic Labyrinthine Prone reflex in 14.3% (1 out of 7) of cases has improved but in controls 11.1% (1 out of 9) became worse and in 22.2% (2 out of 9) has improved. There were no statistically significant differences before and after intervention in two groups (*PV*=0.918) (Table 3).

Negative support reaction reflex in 14.3% (1 out of 7) of cases has improved but in controls 11.1% (1 out of 9) became worse and in 11.1% has improved. There were no statistically significant differences before and after intervention in two groups (*PV* =0.681) (Table 3).

Mid brain level: Body righting reflex in two groups before and after intervention has no changes. There were no statistically significant differences (*PV*=1). Optical righting reflex in 22.2% (2 out of 9) of controls has improved. There were no statistically significant differences before and after intervention in two groups (*PV* =0.470). Amphibian reflex in 11.1% (1 out of 9) of controls improved but before and after intervention in two groups has no differences (*PV*=0.758) (Table 4).

Cortical level: Four foot reflex was statistically significant different in 2 groups before intervention. Four foot reflex in 14.3% (1 out of 7) of cases and in 11.1% (1 out of 9) of controls improved but before and after intervention in two groups has no differences (*PV*=0.918) .Sitting reflex improved in 14.3% (1 out of 7) of cases and became worse in 14.3%(1 out of 7) of cases and in 11.1% (1 out of 9) of controls improved but before and after intervention in two groups has no differences (*PV*=0.758). Kneel standing, reflex in 33.3%% (3 out of 9) of controls improved but before and after intervention in two groups has no differences (*PV*=0.299 (Table 5).

Automatic movement reaction: Parachute reflex in 28.6% (2 out of 7) of cases and in 22.2% (2 out of 9) of controls improved but before and after intervention in two groups has no differences (*PV*=0.758) (Table 6).

Table 1: Primitive reflexes before and after treatment in 2 groups

Reflexes		Reflex status	Control group (N=9) (%)numbers	Case group (N=7) (%)numbers	PV
Palmar Grasp	BT	Undesirable	1 (14.3)	0	0.918
		Borderline	0	1 (11.1)	
		Desirable	6 (85.7)	8 (88.9)	
	AT	Undesirable	0	0	0.758
		Borderline	0	1 (11.1)	
		Undesirable	7 (100)	8 (88.9)	
Plantar Grasp	BT	Undesirable	0	0	0.758
		Borderline	1 (11.1)	0	
		Desirable	8 (88.9)	7 (100)	
	AT	Undesirable	0	0	0.758
		Borderline	1 (11.1)	0	
		Undesirable	8 (88.9)	7 (100)	
Walking	BT	Undesirable	0	0	0.758
		Borderline	1 (11.1)	0	
		Desirable	8 (88.9)	7 (100)	
	AT	Undesirable	0	0	0.758
		Borderline	1 (11.1)	0	
		Undesirable	8 (88.9)	7 (100)	
Moro	BT	Undesirable	0	3 (42.9)	0.174
		Borderline	1 (11.1)	0	
		Desirable	1 (11.1)	1 (14.3)	
	AT	Undesirable	7 (77.8)	3 (42.9)	0.758
		Borderline	1 (11.1)	2 (28.6)	
		Undesirable	0	0	

BT, before treatment; AT, after treatment

Table 2: Crossed Extension (spinal) reflex before and after treatment in 2 groups

Crossed Extension reflex		Control group (N=9) (%) numbers	Case group (N=7) (%) numbers	PV
BT	Undesirable	0	3 (42.9)	0.142
	Borderline)	2 (22.2)	1 (14.3)	
	Desirable	7 (77.8)	3 (42.9)	
AT	Undesirable	1 (11.1)	2 (28.6)	0.681
	Borderline	2 (22.2)	1 (14.3)	
	Undesirable	6 (66.7	4 (57.1)	

BT, before treatment; AT, after treatment

Table 3: Brain Stem reflexes before and after treatment in 2 groups

Reflexes		Reflex Status	Control group (N=9) (%)numbers	Case group (N=7) (%)numbers	PV
Tonic Labyrinthine Prone	BT	Undesirable	2 (22.2)	2 (28.6)	1
		Borderline	2 (22.2)	1 (14.3)	
		Desirable	5 (55.6)	4 (57.1)	
	AT	Undesirable	1 (11.1)	2 (28.6)	0.837
		Undesirable (deleting)	3 (33.3)	0	
		Undesirable	2 (22.2)	5 (71.4)	
Negative Support Reaction	BT	Undesirable	8 (88.9)	7 (100)	0.758
		Borderline	0	0	
		Desirable	1 (11.1)	0	
	AT	Undesirable	7 (77.8)	6 (85.7)	0.837
		Borderline	2 (22.2)	1 (14.3)	
		Undesirable	0	0	

BT, before treatment; AT, after treatment

Table 4: Mid Brain reflexes before and after treatment in 2 groups

Reflexes		Reflex status	Control group (N=9) (%)numbers	Case group (N=7) (%)numbers	PV
Body Righting	BT	Undesirable	4 (44.4)	6 (85.7)	. 0.210
		Borderline	1 (11.1)	0	
		Desirable	4 (44.4)	1 (14.3)	
	AT	Undesirable	4 (44.4)	6 (85.7)	0.210
		Borderline	1 (11.1)	0	
		Undesirable	4 (44.4)	1 (14.3)	
Optical Righting prone/supine	BT	Undesirable	2 (22.2)	4 (57.1)	0.210
		Borderline	4 (44.4)	2 (28.6)	
		Desirable	3 (33.3)	1 (14.3)	
	AT	Undesirable	2 (22.2)	4 (57.1)	0z114
		Borderline	2 (22.2)	2 (28.6)	
		Undesirable	5 (55.6)	1 (14.3)	
Amphibian	BT	Undesirable	2 (22.2)	3 (42.9)	0.606
		Borderline	4 (44.4)	2 (28.6)	
		Desirable	3 (33.3)	2 (28.6)	
	AT	Undesirable	2 (22.2)	3 (42.9)	0.470
		Borderline	3 (33.3)	2 (28.6)	
		Undesirable	4 (44.40	2 (28.6)	

BT, before treatment; AT, after treatment

Table 5: Cortical reflexes before and after treatment in 2 groups

Reflexes		Reflex status	Control group (N=9) (%)numbers	Case group (N=7) (%)numbers	PV
Four Foot	BT	Undesirable	3 (33.3)	7 (100)	0.023
		Borderline	4 (44.4)	0	
		Desirable	2 (22.2)	0	
	AT	Undesirable	3 (33.3)	6 (85.7)	0.055
		Borderline	3 (33.3)	1 (14.3)	
		Undesirable	3 (33.3)	0	
Sitting	BT	Undesirable	4 (44.4)	6 (85.7)	0.210
		Borderline	2 (22.2)	0	
		Desirable	3 (33.3)	1 (14.3)	
	AT	Undesirable	3 (33.3)	6 (85.7)	0.055
		Undesirable (deleting)	2 (22.2)	1 (14.3)	
		Undesirable	4 (44.4)	0	
Kneel standing	BT	Undesirable	6 (7/66)	7 (100)	0.299
		Borderline	3 (33.3)	0	
		Desirable	0	0	
	AT	Undesirable	5 (55.6)	7 (100)	0.142
		Borderline	2 (22.2)	0	
		Undesirable	2 (22.2)	0	

BT, before treatment; AT, after treatment

Table 6: Parachute (Automatic) reflex before and after treatment in 2 groups

	Parachute reflex	Control group (N=9) (%)numbers	Case group (N=7) (%)numbers	PV
BT	Undesirable	1 (11.1)	2 (28.6)	0.351
	Borderline	5 (55.6)	4 (57.1)	
	Desirable	3 (33.3)	1 (14.3)	
AT	Undesirable	1 (11.1)	1 (14.3)	0.681
	Borderline	3 (33.3)	3 (42.9)	
	Undesirable	5 (55.6)	3 (42.9)	

BT, before treatment; AT, after treatment

Discussion:

In this work we tested the influence of adding homeopathy to occupational therapy on abnormal reflexes of children with spastic cerebral palsy. Based on the results of this study there were no significant differences in abnormal reflexes in two groups. There were some important limitations affecting this study. First, the drop-out rate primarily affected the case group. This was due to the complications of CP (like aspiration pneumonia) and transport problems, especially for patients from other near cities. Second, homeopathy is young in Iran and many parents had no information about it, so no trust to it and had fear of its side effects. Third, it was very difficult to motivate the patients for regular refers during 4 months.

There are some studies on children with C.P showed the positive effects of homeopathic approach on motor developmental criteria. Dr Ketan Patel in Amish hospital (India) has studied the effect of homeopathy on neuromuscular abilities of children with CP. He discussed about the positive effects of homeopathy approach on flaccidity and spasticity of limbs muscles, but he did not assess abnormal reflexes. He believes that homeopathy improves motor milestones to start appearing faster. It improves in swallowing, neck handling, sitting, standing and walking with homeopathy. We need no orthopedic corrections or operations. It does not need vigorous physiotherapy also (9).

In one study Dr. Oswal from Sanjivani Clinic in Pune (India) showed G-therapy (a product-based treatment)is claimed to be effective in CP, ataxias, autism, Down syndrome and a wide range of the other developmental and inherited neurological problems. G-therapy is said to be based on homeopathic and

biochemical tissue salt principles. He did not discuss about abnormal reflexes in children with CP (10).

Studies on complementary and alternative medicine (CAM) in neurological disorders have focused on the adult population and its use among pediatric neurology patients has not been well characterized. In one study the use of CAM was common among pediatric neurology patients. The study was a cross-sectional survey of patients and families attending the Alberta Children Hospital neurology clinic Edmonton (Canada) between February and May 2004. Patients were considered eligible if they were between two and 18 years of age and had a known history of neurological disorders. Forty-six (44%) out of 105 patients received one or more types of CAM, with the most common types being chiropractic manipulations (15%), dietary therapy (12%), herbal remedies (8%), homeopathy (8%), and prayer/faith healing (8%). Fifty-nine percent of CAM users reported benefits, and only one patient experienced side effect. This study concluded that over half of the families reported benefits with CAM, and side effects were perceived to be few. Physicians should initiates discussion on CAM during clinic visits so that the families and patients can make informed decisions about using CAM (11).

On the other hand in homeopathy references (texts), the effect of different medicines on spasticity in children due to convulsion is mostly mentioned; the effects of cicuta, zincum, belladonna, gelsemium and stramonium on neonatal and infantile seizures are mentioned but these were not mentioned in improvement of abnormal reflexes in cerebral palsy (12, 13).

In general based on the results of this study it was found that by adding homeopathy to rehabilitation children with spastic cerebral palsy, abnormal reflexes in case group in comparison with control group found some positive effects but had no statistically significant differences. Regarding to proved effects of homeopathy mentioned in different articles on physical status of children with CP as well as executive limitations specially lack of cooperation of parents for 4 months duration, it is not possible to reject the effects of homeopathy on abnormal reflexes of children with CP. As homeopathy is young in Iran, so absence of enough information about it, and for improvement the quality of life of children with CP, further studies are suggested to determine:

- The effect of homeopathy approach on other types of cerebral palsy (extra pyramidal, tonic and ataxic).
- The effect of homeopathy approach on associated disorders of cerebral palsy such as seizures, mental and behavioral disorders, speech and swallowing disturbances.
- The effect of different complementary medicine methods such as herbal medicine, acupuncture, manual treatment, breathing therapy, aromatherapy, neurofeedback, G therapy and… on improving function in children with CP.

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