

# **Improvement of Movement Ability of Eight Cerebral Palsy Cases with Botulinum Toxin Treatment**

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## **Information and Procedure**

In the treatment of the 8 cases of child cerebral palsy, 6 of them are boys while the other 2 are girls. Their ages are in between 1 year and 4 months old to 10 years old. Among all the cases, 6 demonstrate spastic cerebral palsy; 2 show spasm with involuntary limbs movement; 2 suffer from premature delivery; 6 cases in abnormal labor, 2 cases in light birth weight; 5 cases in icterus; 1 case show deformity with little head. 7/8 possess intelligence quotient below 70. All cases demonstrate limb fatigue while 6 cases show abnormal skull CT.

**Treatment:** All cases are treated with acupuncture, acupuncture point injection, Chinese and Western drugs, physiotherapy, massage, functional training integrated treatment for 3 to 5 months, these improve action of joint muscles, deformity is alleviated, those with standing and walking consciousness are then injected with botulinum toxin type A (LANTOX), which is further evaluated by PRS.

According to the report made by Koman and Sanchez, dosage of 1-21 units/kg LANTOX (made in Lanzhou) are suggested to use. LANTOX is selectively injected to muscles that lead to deformity. Upper limb muscles include muscular bicep and tricep brachii, long palmar muscle, wlnar flexor muscle of wrist, short flexor muscle of thumb and thenar muscle. Lower limbs include adductor. Shallow or deep target muscle injections with serious deformity are carried out by doctors with professional training. The effect is immediately observed with daily observation in the first week, with subsequent consultation after a month.

## **Result**

Among the 8 cases treated with LANTOX, 4 can walk steadily. In the case of a 10 year-old child, apparent enlargement of femoral angle is observed 2 hours after injection, elevation of lower limbs increase 30 degrees, left deformed thumb moves with good flexibility. In another case of a 2 year-old boy, he is willing to walk the day after injection, but not to sit or lie down. Easy stumble is shown when running. Details please refer to the table.

**Table 1 PRS of child cerebral palsy before and after treatment of LANTOX**

Patients No.	Crossing legs		Talipes				Elbow Deformity			
	femur angle		Before		After		Before		After	
	Before	After	L	R	L	R	L	R	L	R
1	0	3	0	0	2	2	0	0	1	1
2	2	3	2	0	3	3	3	2	3	3
3	2	3	2	0	3	3	3	2	3	3
4	0	2	0	0	2	2	1	1	2	2
5	1	3	2	2	3	3	1	1	2	3
6	1	3	2	0	3	2	1	2	2	3
7	0	2	0	0	0	0	0	0	2	2
8	1	3	0	0	2	2	1	1	2	2

### **Appreciation from Experience**

2/3 of child cerebral palsy are spastic cerebral palsy, spasm leads to muscle deformity which seriously limit the movement of patients. Through the treatment with acupuncture, acupuncture point injection, Chinese and Western drugs, physiotherapy, massage and functional training integrated treatment can improve the effectiveness of the cure. However, this is not effective on child with relatively older age or child with serious muscle deformity.

LANTOX functions in the nerve ending of motor neurons. The toxin binds to the proteins which are necessary for the attachment to the presynaptic membrane, thus no acetylcholine is released and caused muscle paralysis. This helps to relief muscle spasm and deformity, which further improves movement disorder.

Following the combined treatment from Chinese and Western medicine, treatment with LANTOX further enhances the effect in short period of time. 4 cases show apparent efficacy with no side effect. It can be concluded that LANTOX is effective and safe in treating cerebral palsy, without damaging brain tissues. Efficacy is further enhanced by functional training.

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