

# BEIKE BIOTECHNOLOGY

## Patient Case Study

### Cerebral Palsy and ROP

Male, 13 years old, March - April 2011

#### Background

Age: 13 years old

Sex: Male

Nationality: American

Date of Admission: March 31, 2011

Date of Discharge: April 23, 2011

Treatment Center: Qingdao Chengyang People's Hospital, Qingdao, China

Diagnosis on Admission: Cerebral Palsy and Retinopathy of Prematurity

#### Condition On Admission

Main presenting complaint was of developmental delay and poor vision since birth. Upon physical examination the patient was found to be unable to speak. He also could not control his neck and head very well. A motor neurological examination showed muscle tone was hyper in all limbs and the dexterity and strength of all limbs were poor. Any coordinated movement of his limbs was very difficult. The examination of the cranial nerve showed the pupils were 3 mm, equally reactive to light, and the movement of both eyes was almost agile without nystagmus.

#### Treatment Schedule

Patient received 5 umbilical cord blood-derived stem cell (UCBSC) packets by intravenous (IV) injection and lumbar puncture (LP), as per schedule below:

Number	Date	Cell Type	Delivery Method	Side Effects
1	April 1, 2011	UCBSC	IV	none reported
2	April 6, 2011	UCBSC	IV	none reported
3	April 11, 2011	UCBSC	IV	none reported
4	April 15, 2011	UCBSC	LP	nausea
5	April 20, 2011	UCBSC	LP	none reported

## Condition On Discharge

The patient's physical condition was stable at discharge. The episode of nausea following the first lumbar puncture was fully resolved without any long term effects. The doctors noted that the patient's uncontrollable salivation was decreased and the muscular tension of the limbs had improved. The patient had better performance of coordinated motion and better balance and body control. As an example he was able to sit and stand with less support.

The family also reported improvements similar to those of the doctors' observations and they additionally noticed that their son was sleeping better and attempting to communicate with words (although still unable to announce them). The parents wrote the following in their discharge follow up assessment form:

“He is expressing himself (his likes and dislikes) in a new way. He sits with less assistance yet still assisted. When we returned home he sat on the sofa by himself for two hours. Before he could only sit on the same sofa for a few minutes”

## Follow Up Information

**Condition 3 months after treatment:** At the 3 month follow up point the patient was still doing very well and the family reported the patient had improved in his physical condition and that these improvements had continued to progress.

Please see an excerpt from the patient's 3 month assessment below:

Symptom	Parents' Assessment of Improvement
Spasticity	Small improvements
Trunk muscle strength	Moderate improvements
Limb muscle strength	Moderate improvements
Head control	Moderate improvements
Range of movement	Moderate improvements
Involuntary movements	Moderate improvements
Crawling	Small improvements
Balance	Moderate improvements
Standing up	Small improvements
Walking	Moderate improvements
Speech (babbling in infants)	Small improvements

Symptom	Parents' Assessment of Improvement
Drooling	Small improvements
Swallowing	Moderate improvements
Appetite	Moderate improvements
Learning disability	Small improvements
Mood disorder	Small improvements

In addition to the above assessment, the parents wrote the following about their son's progress:

"He is now riding his bicycle with my aiding in steering only. He is holding his body in midline and keeping his hands on the bar without assistance. [He] is trying very hard to purposefully communicate with us. I am catching [him] with his hands in eye view and he is looking at his hands. [His] ability to sit has changed. He does much more of the upper body control. [His] stride when walking is quicker and longer. [His] neurologist was amazed at [his] eye contact with him. His blood work came back normal in growth hormone levels and the endocrinologist [*sic*] was pleased with [his] head control. He is sleeping and eating well. He is riding in the car holding his body in midline. We are very pleased with his progress since we have been home."

**Condition 6 months after treatment:** The mother completed a 6 month follow up form. She noted continued improvement in her son's learning ability, swallowing, and spasticity. She wrote:

"Although he is the same he has greatly improved in many areas of his life. There is an ease when I care for him. He is participating with the family with higher cognitive function. [He] has an increased stamina that allows for more therapies in each day. As a family we are highly pleased with his progress from the stem cells. Well worth the cost and time to go to China."

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