

# BEIKE BIOTECHNOLOGY

## Patient Case Study

### Cerebral Palsy (CP)

Male, 9 years old, Feb - Mar 2019

#### Background

Age: 9 years old

Sex: Male

Nationality: Polish

Date of Admission: February 10, 2019

Date of Discharge: March 3, 2019

Treatment Location: Bangkok, Thailand

Diagnosis on Admission: Cerebral Palsy (CP) / Hypoxic ischemic encephalopathy

#### Medical Condition History

This new-born male baby was born by caesarean section from a complicated pregnancy at 32 weeks of gestation due to fetal bradycardia (low fetal heart rate). At birth, the new-born had symptoms of intermediate degree asphyxia and was later on diagnosed with hemorrhagic hydrocephalus which he was treated for, as well as hypoxic ischemic encephalopathy.

#### Condition On Admission

The patient could understand commands but was only able to speak single words. He could only move with a lot of assistance and could not walk. He could however sit independently. He had severe spasticity and coordination issues. Concentration was poor.

#### Treatment Schedule

The patient received 6 umbilical cord blood-derived stem cell (UCBSC) packets by intravenous (IV) and intrathecal injections, as per the schedule below:

Injection #	Date	Cell Type	Delivery Method	Side Effects
1	February 11, 2019	UCBSC	IV	none reported
2	February 13, 2019	UCBSC	IV	none reported
3	February 15, 2019	UCBSC	Intrathecal injection	none reported
4	February 18, 2019	UCBSC	Intrathecal injection	none reported
5	February 22, 2019	UCBSC	Intrathecal injection	none reported
6	February 25, 2019	UCBSC	Intrathecal injection	none reported
7	March 1, 2019	UCBSC	IV	none reported

In addition to stem cell injections, the patient received a daily rehabilitation therapy program that included physiotherapy, aquatic therapy, transcranial magnetic stimulation, acupuncture and hyperbaric oxygen therapy.

## Condition On Discharge

The patient has stronger trunk muscles which allow him to better control his whole body when sitting on a therapeutic ball as he can now strongly move his body in different directions with minimal support. The patient has shown improvement in standing balance as well as he can stand longer and in a more stable way. His concentration has improved as he can now focus on an activity from 3 to 5 minutes compared to an attention span of 1 minute initially. Moreover, regarding his hand function, he can now voluntarily open his left hand to grasp and release an object more often.

## Follow Up Information

**Condition 6 month after treatment:** The patient's parents mentioned: *"He walks better on our balcony, he is using his left hand more often, he can pull himself up. He is more focused and calm as well. He can now combine two words which he couldn't do before. His doctor observed a significant improvement in his condition."*

**Condition 12 months after treatment:** At the 12 month follow up point the patient's parents reported: *"He moves better, when we hold his hands, he walks better, he can maintain a correct posture"*.

In addition, please see an excerpt from the patient's 12 month assessment below (filled by his parents):

Symptom	Assessment of Improvement
Appetite	Significant improvement
Balance	Moderate improvement
Bladder control	Significant improvement
Crawling	Significant improvement
Drooling	Small improvement
Head control	Significant improvement
Involuntary movements	Moderate improvement
Learning disability	Moderate improvement
Limb muscle strength	Significant improvement
Mood disorder	Moderate improvement
Range of movement	Significant improvement
Spasticity	Moderate improvement
Speech (babbling for infants)	Significant improvement
Standing up	Significant improvement
Swallowing	Significant improvement
Trunk muscle strength	Moderate improvement
Walking	Significant improvement

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