

# BEIKE BIOTECHNOLOGY

## Patient Case Study

### Cerebral Palsy

### Female, 16 months old, Feb - March 2019

#### Background

Age: 16 months old

Sex: Female

Nationality: Colombian.

Date of Admission: February 25, 2019

Date of Discharge: March 18, 2019

Treatment Location: Bangkok, Thailand

Diagnosis on Admission: Cerebral Palsy

#### Medical Background and Condition On Admission

The patient was victim of a cardiorespiratory arrest at 4 months old which caused hypoxic ischemic encephalopathy and left her diagnosed with cerebral palsy. She was affected by one single epileptic seizure at 45 days after her cardiorespiratory arrest and she never had a seizure again after that episode.

At admission, the patient had respiratory problems and needed suctioning regularly. She had poor/fair arousal level and impaired vision. She had moderate spasticity in all extremities. She had abnormal reflexes (including abnormal asymmetrical tonic neck reflex). Her development was delayed in all aspects. She could not roll over, crawl, sit, nor stand by herself. She was unable to communicate with others, but was able to cry to show her needs. Prior to starting our stem cell treatment, she regularly had physiotherapy, occupational therapy, speech therapy, hydrotherapy, and Vojta.

#### Treatment Schedule

The patient received 8 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	March 1, 2019	UCBSC	IV	none reported
2	March 5, 2019	UCBSC	Intrathecal	none reported
3 & 4	March 8, 2019	UCBSC	IV + Intrathecal	none reported
5 & 6	March 12, 2019	UCBSC	Intrathecal x 2	none reported
7 & 8	March 15, 2019	UCBSC	IV + Intrathecal	none reported

#### Condition On Discharge

The patient's visual perception has improved as she now responds more to the light coming from a light ball in a dark room setting. She can move her eyes and follow the light source for a few seconds and she can recognize

many light colors (initially, she could only recognize a yellow light). There is however still no eye tracking with non lit objects but there is a response when the therapist stimulates the patient with verbal and physical prompts, as she slightly turns her head, raises it up, and smiles. According to her delayed development and visual problems, her gross and fine motor skills need to be continuously stimulated by those rehabilitative programs that she has always been doing. Currently, she is unable to freely turn her head and she can only hold it in a neutral position for a few seconds. Her four limbs are still spastic which limits her movements and prevent normal pattern. Regarding her hand function, she can grasp and release objects with over-hand support. Sometimes she can release objects independently but improvements in that area are not stable at the moment. The patient needs to keep doing therapies to inhibit her abnormal reflex and hypertonicity along with exercises to stimulate her motor development.

## Follow Up Information

**Condition 6 months after treatment:** At the 6 month follow up point the patient's parents reported significant improvements in the patient's general physical condition and they were mentioning that improvements were continuously being made. They rated the patient's quality of life improvement as moderate and mentioned: *"Her head and trunk control has improved. Her swallowing has also improved, and she recognizes and connects with her environment very well. When she consults with our local specialists, everyone sees improvements and recovery. They say that she has only improved and has not worsened at all."*

Please see an excerpt from the patient's 6 month assessment below (filled by her parents):

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

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