BEIKE BIOTECHNOLOGY

Patient Case Study

Cerebral Palsy

Male, 9 years, February - March 2019

Summary

Diagnosis	Sex	Age	Nationality
Cerebral Palsy	Male	9 years	Polish
Injections	**Cell type**	**Admission date**	**Discharge date**
7	UCBSC	February 10th 2019	March 3rd 2019

Medical 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. 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.

Number	Date	Cell Type	Delivery Method	Side Effects
1	2019-02-11	UCBSC	Intravenous Injection	none reported
2	2019-02-13	UCBSC	Intravenous Injection	none reported
3	2019-02-15	UCBSC	Intrathecal Injection	none reported
4	2019-02-18	UCBSC	Intrathecal Injection	none reported
5	2019-02-22	UCBSC	Intrathecal Injection	none reported
6	2019-02-25	UCBSC	Intrathecal Injection	none reported
7	2019-03-01	UCBSC	Intravenous Injection	none reported

Condition at 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.

Condition 6 months 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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