BEIKE BIOTECHNOLOGY

Patient Case Study

Cerebral Palsy

Male, 10 months, October - October 2018

Summary

Diagnosis	Sex	Age	Nationality
Cerebral Palsy	Male	10 months	British
Injections	**Cell type**	**Admission date**	**Discharge date**
6	UCBSC	October 2nd 2018	October 27th 2018

Medical history

This is a 10 months old baby who suffered from long and complicated labor. An emergency Cesarean section was performed after failure to proceed with natural delivery and there was no heartbeat at birth. Despite prolonged resuscitation (30+ minutes), given the lack of response, care was withdrawn and the baby was given back to his parents. Shortly after, unexpected signs of life started to appear and he was intubated and taken care of in an intensive care unit. The MRI scan examination performed at 7 days of life confirmed the diagnosis of neonatal ischemic hypoxic encephalopathy.

Condition On Admission

The patient had good neck and trunk control, good hearing and eye tracking, mild muscle tightness in lower extremities and mild hypertonicity in the lower extremities predominantly affecting the right side. In terms of functional ability, he was able to roll over with minimal guidance. He could sit without support for up to 5 minutes. In ring sitting, his trunk was slightly slouched, but he could sit without support. Prior to our treatment program, the patient was having 3 sessions of Bobath physiotherapy per week (45 minutes per session).

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	2018-10-03	UCBSC	Intravenous Injection	none reported
2	2018-10-08	UCBSC	Intravenous Injection	none reported
3	2018-10-12	UCBSC	Intrathecal Injection	none reported
4	2018-10-16	UCBSC	Intrathecal Injection	none reported
5	2018-10-19	UCBSC	Intrathecal Injection	none reported
6	2018-10-22	UCBSC	Intravenous Injection	none reported

Condition at discharge

During our 3 weeks treatment program, the patient has gradually shown some improvement in terms of movements. For instance, his spasticity has decreased to a nearly normal tone. As a consequence, his pattern of gross movement control is better. He can also open his left hand better compared to our initial assessment. He tends to open both hands more to grasp objects and fully push on his hand in crawling position. Recently he started to have full elbow extension while crawling for nearly 2 meters (he initially needed moderate support for his elbows when crawling). The patient is now able to sit with his back fully straight in a ring sitting position while trying to reach an object above his head.

Condition 3 months after treatment

During our 3 weeks treatment program, the patient has gradually shown some improvement in terms of movements. For instance, his spasticity has decreased to a nearly normal tone. As a consequence, his pattern of gross movement control is better. He can also open his left hand better compared to our initial assessment. He tends to open both hands more to grasp objects and fully push on his hand in crawling position. Recently he started to have full elbow extension while crawling for nearly 2 meters (he initially needed moderate support for his elbows when crawling). The patient is now able to sit with his back fully straight in a ring sitting position while trying to reach an object

above his head.

Condition 12 months after treatment

Please see an excerpt from the patient's 12 month assessment below (assessment made by the patient's parents):

Symptom	Assessment of Improvement
Appetite	Moderate improvement
Balance	Moderate improvement
Crawling	Small improvements
Drooling	Not applicable
Involuntary movements	Moderate improvement
Limb muscle strength	Moderate improvement
Range of movement	Moderate improvement
Spasticity	Moderate improvement
Speech (babbling for infants)	Moderate improvement
Standing up	Moderate improvement
Swallowing	Moderate improvement
Trunk muscle strength	Moderate improvement
Walking	Moderate improvement