

BEIKE BIOTECHNOLOGY

Patient Case Study

Cerebral Palsy

Male, 3 years, February - March 2023

Summary

Diagnosis	Sex	Age	Nationality
Cerebral Palsy	Male	3 years	UK
Injections	Cell type	Admission date	Discharge date
7	UCMSC	February 26th 2023	March 19th 2023

Medical history

The patient was diagnosed with severe hypoxia at birth, leading to severe neonatal encephalopathy. He experienced seizures shortly after birth, which were managed with medications including midazolam, keppra, and phenobarbitone. Despite seizure clusters, he has not experienced obvious seizures since May. The patient has been on a regimen of phenobarbitone, keppra, and baclofen to manage his condition, with improvements noted in dystonia and reflux. He also underwent hyperbaric oxygen therapy (HBOT) to aid his vision impairment. However, recent developments revealed angiodysplasia in his stomach, necessitating caution before proceeding with stem cell treatment.

Condition On Admission

The patient exhibits hypertonia, dystonia, and an unsafe swallow, necessitating the use of an NG tube for feeding. He has severe reflux and experiences gas due to the NG tube. Despite his challenges, the patient shows responsiveness to touch, smiles when spoken to, and exhibits some developmental progress. He requires assistance with sitting and has a global developmental delay, indicating ongoing challenges in his motor and cognitive development. The family hopes for improvements in his head control and

vision through stem cell treatment, but the process has been delayed due to concerns regarding his recent health issues, particularly the stability of his angiodysplasia condition for at least three months.

Treatment Schedule

Patient received 7 packs of umbilical cord derived stem cell (UCMSC) by intravenous (IV) injection and intrathecal injection via lumbar puncture (LP), as per the schedule below:

Number	Date	Cell Type	Delivery Method	Side Effects
1	2023-02-02	UCMSC	Intrathecal Injection & Intravenous Injection	none reported
2	2023-03-06	UCMSC	Intrathecal Injection	none reported
3	2023-03-09	UCMSC	Intrathecal Injection & Intravenous Injection	none reported
4	2023-03-13	UCMSC	Intrathecal Injection & Intravenous Injection	none reported

Condition at discharge

After undergoing stem cell treatment, the patient's general physical condition has shown small improvements, including slightly more relaxed tone, increased appetite, improved car travel, and recognition of surroundings and people. Quality of life has slightly improved, although no confirmation from the doctor is available. The parents express somewhat satisfaction with the treatment outcome. In terms of specific symptoms, there have been small improvements in head control, range of movement, spasticity, trunk muscle strength, and walking.

Symptom	Parents' Assessment of Improvement
Appetite	Small improvement
Head control	Small improvement
Range of movement	Small improvement
Spasticity	Small improvement
Trunk muscle strength	Small improvement

Symptom	Parents' Assessment of Improvement
Walking	Small improvement

Condition 1 month after treatment

The patient has experienced moderate improvements in his general physical condition, such as being able to sit unaided for short periods and displaying increased vocalization, indicating a desire to communicate. Additionally, the patient's quality of life has moderately improved, confirmed by the doctor, leading to overall satisfaction with the treatment outcome. However, there have been some setbacks, notably a worsening of drooling compared to before the treatment.

Symptom	Parents' Assessment of Improvement
Appetite	Moderate improvement
Balance	Small improvement
Head control	Moderate improvement
Limb muscle strength	Moderate improvement
Standing up	Moderate improvement
Swallowing	Small improvement
Trunk muscle strength	Moderate improvement
Speech	Small improvement

Condition 3 months after treatment

The patient has shown small improvements in his general physical condition, appearing more alert, aware, and friendly to strangers. Although the doctor hasn't confirmed improvements, the parents are satisfied with the moderately improved quality of life. The patient has started taking steps with a walker, which is remarkable progress. However, he experienced a chest infection post-treatment, requiring antibiotics. Notably, there have been significant improvements in walking, moderate improvements in head control, limb muscle strength, range of movement, speech, standing up, and trunk muscle strength. Additionally, there have been small improvements in appetite, balance, crawling, drooling, involuntary movements, and swallowing.

Symptom	Parents' Assessment of Improvement
Appetite	Moderate improvement

Balance	Small improvement
Crawling	Small improvement
Drooling	Small improvement
Head control	Moderate improvement
Involuntary movements	Small improvement
Limb muscle strength	Moderate improvement
Range of movement	Moderate improvement
Spasticity	Small improvement
Speech	Moderate improvement

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