

BEIKE BIOTECHNOLOGY

Patient Case Study

Cerebral Palsy

Male, 4 years, November 2022

Summary

Diagnosis	Sex	Age	Nationality
Cerebral Palsy	Male	4 years	UK
Injections	Cell type	Admission date	Discharge date
8	UCMSC	November 7th 2022	November 29th 2022

Medical history

The patient, born in January 2018, experienced a hypoxic brain injury at 8 weeks old, resulting in cerebral palsy (CP) characterized by limb motor disorder, mixed spasticity, and dystonia. Following seven months of hospitalization and subsequent rehabilitation, the patient returned home in January 2019. Professional medical care involves neuro-disability and respiratory consultants, physiotherapists, occupational therapists, and speech and language therapists. The patient's optic nerves are damaged, leading to registered visual impairment, and he is fed via PEG due to unsafe swallowing. Medications include Baclofen, Gabapentin, Keppra, Omeprazole, Abidec, Glycopyrronium, and nebulizer treatment. PEG insertion for feeding occurred in August 2018 without complications. Despite improvements in muscle tone and stable oxygen levels, the patient faces challenges with mobility, crawling, walking, and consistent swallowing ability.

Condition On Admission

The patient, now weighing 10.3 kg, exhibits improved muscle tone and enjoys fruit purée twice daily. Limited progress in hand rotation and opening is facilitated by splints. Overall health remains stable without recent hospitalizations or complications. Oxygen

levels range from 97% to 100% during sleep, monitored at night. Despite no adverse reactions to medication and regular bowel movements, swallowing difficulties persist, necessitating oral and nasal suction. The medical team considers removing Keppra, given the low dosage and weight stability, to manage potential epilepsy risks. With hopes for increased mobility, speech, and autonomy, the family seeks cell therapy to enhance cognition, muscle strength, spasticity reduction, sitting balance, and fine motor skills, ultimately improving quality of life.

Treatment Schedule

Patient received 8 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	2022-11-10	UCMSC	Intrathecal Injection & Intravenous Injection	none reported
2	2022-11-17	UCMSC	Intrathecal Injection	none reported
3	2022-11-17	UCMSC	Intrathecal Injection & Intravenous Injection	none reported
4	2022-11-21	UCMSC	Intrathecal Injection	none reported
5	2022-11-24	UCMSC	Intrathecal Injection & Intravenous Injection	none reported

Condition at discharge

The patient showed some positive changes following stem cell treatment. His muscular tone appeared more relaxed, and the doctor maintained the same medication dosage due to increased relaxation. Trunk strength improved while sitting, and increased flexibility was observed in crossing legs. Moreover, he displayed improved communication skills, being more expressive and smiling more often. Small improvements were noted in drooling, head control, involuntary movements, learning disability, range of movement, spasticity, and swallowing. Moderate improvements were observed in trunk muscle strength.

Symptom	Parents' Assessment of Improvement
Drooling	Small improvement
Head control	Moderate improvement

Involuntary movements	Small improvement
Learning disability	Small improvement
Range of movement	Small improvement
Spasticity	Moderate improvement
Swallowing	Small improvement
Trunk muscle strength	Moderate improvement

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