

BEIKE BIOTECHNOLOGY

Patient Case Study

Cerebral Palsy and Epilepsy

Female, 7 years old, Nov. - Dec. 2010

Background

Age: 7 years old

Sex: Female

Nationality: Brazilian

Date of Admission: November 1, 2010

Date of Discharge: December 8, 2010

Treatment Center: Bethune International Peace Hospital, Shijiazhuang, China

Diagnosis on Admission: Cerebral Palsy and Epilepsy

Condition On Admission

The main presenting problem was that of developmental delay and intermittent seizures since birth. On admission the patient was alert and orientated. Her memory, perceptive functions, and awareness to surroundings were near normal. She could speak and communicate with others but her speech was slow. She was unable to stretch her legs, stand, or walk but could kneel, turn over, and crawl by herself. Muscle tone and strength of her upper limbs were normal but fine motor control in her hands was not good. The muscle tone in her lower limbs was higher than normal and muscle strength was at level 3. Vital signs were in the normal range and stable and other routine checks showed no other abnormalities.

Treatment Schedule

Patient received 8 umbilical cord-derived mesenchymal stem cell (UC-MSC) packets by intravenous (IV) injection and lumbar puncture (LP) as per schedule below:

Number	Date	Cell Type	Delivery Method	Side Effects
1	November 3, 2010	UC-MSC	IV	none reported
2	November 8, 2010	UC-MSC	LP	none reported
3	November 12, 2010	UC-MSC	LP	none reported
4	November 17, 2010	UC-MSC	LP	none reported
5	November 22, 2010	UC-MSC	IV	none reported
6	November 26, 2010	UC-MSC	LP	none reported
7	November 29, 2010	UC-MSC	LP	none reported
8	December 3, 2010	UC-MSC	LP	none reported

Condition On Discharge

Patient experienced no adverse events during the treatment and completed all stem cell injections without any side effects. The doctors observed her gaining some improvements in motor function during the treatment period; she could turn herself over more easily, crawl faster, and had much better balance in a kneeling position. They also noted improvements in her speaking. Her voice was clearer and speech was smoother.

Follow Up Information

Condition 3 months after treatment: The parents of the patient reported improvements at the 3 month follow up time point and stated that they are currently satisfied with the outcome of the treatment. In addition to the improvements listed in the table below they also noted, “She shows small improvements in cognition. She is more attentive, focused in school, more attentive to things around her and the everyday. Improved her diction and pronunciation of words. Stopped dribbling. The dyspraxia generally not improved, ie, showed no improvement in fine motor coordination, for example she still can not write or draw... She can stand with support and control trunk very well. Our therapist said she is recovering fast muscle strength of lower limbs.’

Below are the family’s answers to a list of symptoms and the changes seen since the beginning of treatment 3 months ago:

Symptom	Parents’ Assessment of Improvement
Spasticity	Small improvement
Trunk muscle strength	No improvement
Limb muscle strength	Small improvement
Head control	Not applicable
Range of movement	Small improvement
Involuntary movements	Not applicable
Crawling	Not applicable
Balance	No improvement
Standing up	No improvement
Walking	No improvement
Speech (babbling in infants)	Not applicable
Drooling	Significant improvement
Swallowing	Not applicable
Appetite	Significant improvement
Learning disability	Small improvement
Mood disorder	No improvement