BEIKE BIOTECHNOLOGY

Beike-Coordinated Patient Case Study
Optic Nerve Hypoplasia
Female, 16 months old, January - July 2011

This case study has been produced by Beike Biotechnology in association with the doctors and medical staff of Chengyang People's Hospital. Information concerning the provided treatment and patient condition upon admission and discharge has been distributed to Beike by the treating facility's medical staff. All follow-up data has been provided directly to Beike by the patient and/or patient's guardians. For additional information about treatment, please send an inquiry at www.stemcellschina.com

Background

Age: 16 months old
Sex: Female
Nationality: Irish
Date of Admission: January 16, 2011
Date of Discharge: March 1, 2011
Treating Facility: Qingdao Chengyang People's Hospital. Qingdao, China.
Diagnosis on Admission: Optic Nerve Hypoplasia (ONH)
Stem Cell Type: Beike-produced umbilical cord-derived mesenchymal stem cells (UC-MSC)

Condition On Admission

The patients had bilateral vision deterioration and a development delay since she was 5 months old. On physical examination her eyeballs were normal and pupils were equal and reactive to light. She could recognize light and dark. Nystagmus were present. She could not look at objects and mostly let her head hang down to the floor when sitting.

Treatment Schedule

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

Number	Date	Cell Type	Delivery Method	Side Effects
1	January 19, 2011	UC-MSC	IV	none reported
2	January 21, 2011	UC-MSC	IV	none reported
3	January 24, 2011	UC-MSC	IV	none reported
4	January 28, 2011	UC-MSC	IV	none reported

5	February 11, 2011	UC-MSC	IV	none reported
6	February 16, 2011	UC-MSC	IV	none reported
7	February 21, 2011	UC-MSC	IV	none reported
8	February 25, 2011	UC-MSC	IV	none reported

Condition On Discharge

Stem cell treatment was completed without any adverse events or side effects. At the end of the treatment period the patient was able to reach out and grasp objects 50cm in front of her and track light with her eyes. There was also a decrease in the nystagmus.

Follow-Up Information

Condition 1 month after treatment: One month after their daughter's treatment the parents completed a Beike follow-up survey and in this survey they reported that their daughter had made significant progress in her physical condition and that her quality of life had significantly improved. At the time they also felt that new improvements were still being made by their daughter.

Below is an excerpt from the patient's completed follow-up survey:

Symptom	Patient's Assessment of Improvement
Blindness	Significant improvement
Light perception	Significant improvement
Ability to see hand movement	Significant improvement
Able to count fingers	Not applicable
Vision in left eye	Significant improvement
Vision in right eye	Significant improvement
Night vision	Significant improvement
Ability to see things at a close distance	Significant improvement
Ability to see things at a far distance	Not Applicable
Nystagmus	Significant improvement
Strabismus	Significant improvement

Due to their daughters benefits form the first treatment they returned for a second course of treatment in June 2012. Below is the summary from this admission and a follow up report.

Background

Date of Admission: June 14, 2011
Date of Discharge: July, 2011
Stem Cell Type: Beike-produced umbilical cord-derived mesenchymal stem cells (UC-MSC)

Condition On Admission

The main complain was still the binocular visual deficit. The physical examination showed that the patient's consciousness, speech, memory and orientation were normal. Examination of the cranial nerves showed that the pupils were 3mm. The movement of both eyes was agile. Motor-neurological examination showed that the power, dexterity, and strength of all limbs was normal and coordinated movements were normal.

Treatment Schedule

Patient received 7 Beike-produced umbilical cord-derived mesenchymal stem cell (UC-MSC) packets by intravenous (IV) injection as per schedule below:

Number	Date	Cell Type	Delivery Method	Side Effects
1	June 18, 2012	UC-MSC	IV	none reported
2-3	June 22, 2012	UC-MSC	IV	none reported
4	June 25, 2012	UC-MSC	IV	none reported
5-6	June 29, 2012	UC-MSC	IV	none reported
7	July 2, 2012	UC-MSC	IV	none reported

Condition On Discharge and Follow-Up Information

Condition on Discharge: Patient tolerated the treatment well and had no fever, headaches, or other side effects. No new improvements in her vision or light perception were observed during her stay at the hospital.

Condition 1 month after treatment: The family reported back via the Beike follow-up program that they were happy with the outcome of the second treatment and they noticed their daughter started to point out smaller objects and could see more details. These improvements were still continuing to increase over time.

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