

BEIKE BIOTECHNOLOGY

Beike-Coordinated Patient Case Study

Friedreich's Ataxia

Female, 14 years old, Dec 2010 and 2011

This case study has been produced by Beike Biotechnology in association with the doctors and medical staff of Bethune International Peace Hospital of Shijiazhuang. 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: 14 years old

Sex: Female

Nationality: Argentinean

Date of Admission: December 2, 2010

Date of Discharge: January 10, 2011

Treating Facility: Bethune International Peace Hospital, Shijiazhuang, China

Diagnosis on Admission: Friedreich's Ataxia

Stem Cell Type: Beike-produced umbilical cord blood-derived stem cells (UCBSC)

Condition On Admission

The patient has experienced a progressive walking impairment for the last seven years and had been unable to walk or stand for the last year. A neurological examination showed nystagmus in both eyes and speech that was unclear and slow. Muscle power in the upper limbs was 3/5 and muscle power in the lower limbs was 1/5. Muscle tone of all limbs, especially the lower limbs, was low and tendon reflexes were weak. The finger-to-finger test, finger-to-nose test, toe-heel-shin test, and the Romberg's sign test could not be performed. Shallow and deep sensations were normal. The patient's International Cooperation Ataxia Rating Scale (ICARS) score was 69.

Treatment Schedule

Patient received 8 Beike-produced umbilical cord blood-derived stem cell (UCBSC) packets by intravenous (IV) injection and lumbar puncture (LP) as per schedule below:

Number	Date	Cell Type	Delivery Method	Side Effects
1	December 3, 2010	UCBSC	IV	none reported
2	December 8, 2010	UCBSC	IV	none reported

3	December 13, 2010	UCBSC	LP	none reported
4	December 17, 2010	UCBSC	LP	none reported
5	December 22, 2010	UCBSC	IV	none reported
6	December 27, 2010	UCBSC	LP	none reported
7	December 31, 2010	UCBSC	LP	none reported
8	January 5, 2011	UCBSC	LP	none reported

Condition On Discharge

After the stem cell transplantation the patient had no complications or side effects. The doctors reported her balance and coordination had improved. She was able to sit up by herself and use her arms to support herself on the bed. She was able to take a few steps with the aid of a walker and another person's support and the finger-to-finger and finger-to-nose test was a little more accurate than before. Her ICARS score had improved to 63.

The patient returned for a second treatment one year after her initial treatment and the information about this second treatment is below:

Background

Age: 15

Date of Admission: December 3, 2011

Date of Discharge: January 3, 2012

Treating Facility: Bethune International Peace Hospital, Shijiazhuang, China

Diagnosis on Admission: Friedreich's Ataxia

Stem Cell Type: Beike-produced umbilical cord blood-derived stem cells (UCBSC) and umbilical cord-derived mesenchymal stem cells (UCMSC)

Condition On Admission

Nystagmus was still present in both eyes and her speech was slow. The muscle strength grade of her upper limbs had increased since admission to her first treatment one year previously to 4/5 and the lower limbs was 2/5.

Treatment Schedule

Patient received 5 Beike-produced umbilical cord blood-derived stem cell (UCBSC) packets and 2 umbilical cord-derived mesenchymal stem cell (UCMSC) packets by intravenous (IV) injection and lumbar puncture (LP) as per schedule below:

Number	Date	Cell Type	Delivery Method	Side Effects
1	December 5, 2011	UCBSC	IV	none reported

2	December 9, 2011	UCBSC	LP	none reported
3	December 14, 2011	UCBSC	LP	none reported
4	December 19, 2011	UCBSC	LP	none reported
5	December 23, 2011	UCBSC	IV	none reported
6	December 26, 2011	UCMSC	LP	back pain
7	December 30, 2011	UCMSC	LP	back pain

Condition On Discharge

The back pain following the last two lumbar puncture injections was resolved without further effects. The doctors reported improvements in the patient's balance and coordination. On the discharge follow-up report completed by her parents, they stated she had greatly improved her muscle strength, especially in her arms and abdomen, giving her improved ability to balance and do more things with ease in her daily life. They also commented that she managed to stand without feeling so tired and was using the walker with less assistance.

Follow-Up Information

Condition 1 month after 2nd treatment: The family indicated on the Beike follow-up form that their daughter had improved physical condition and quality of life. Improvements were particularly seen in her trunk strength and stability. She could now go from sitting to standing with very little assistance and managed to walk with her walker unaided for short distances. They also commented that these improvements were still developing and increasing.

Condition 12 months after 2nd treatment: The family indicated on the Beike follow-up form that they were satisfied with the outcome of their daughter's treatment and that she had gained significant improvements in her physical condition and quality of life. They stated her stability, motor skills, speech, memory, and sleeping patterns had all improved. Also, there were improvements in her ability to walk; she now had the possibility of using a walker and she was standing for longer periods of time in her standing frame a few times a day.

Please see the excerpt below from her follow-up survey:

Symptom	Parents' Assessment of Improvement
Trunk control	Significant improvement
Balance	Significant improvement
Movement in general	Significant improvement
Walking	Moderate improvement

Standing up	Significant improvement
Spasticity	Significant improvement
Overall strength	Significant improvement
Limb muscle strength	Significant improvement
Trunk muscle strength	Significant improvement
Range of movement	Moderate improvement
Fine motor control	Moderate improvement
Hand control	Moderate improvement
Writing	Moderate improvement
Energy	Moderate improvement

Disclaimer: The medical information provided in this document is an information resource only and is not to be used or relied on for any diagnostic purpose.

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