

# BEIKE BIOTECHNOLOGY

## Patient Case Study

### Spinal Muscular Atrophy Type 1

Male, 3 years old, May - June 2010

#### Background

Age: 3 years old

Sex: Male

Nationality: Hungarian

Date of Admission: May 6, 2010

Date of Discharge: June 3, 2010

Treatment Center: Bethune International Peace Hospital, Shijiazhuang, China

Diagnosis on Admission: Spinal Muscular Atrophy Type 1

#### Condition On Admission

Patient has had progressive weakening of the limbs since birth. The child looked weak and limp, spoke in a low voice, had difficulties to lift his head and arms, and was unable to lift his legs. He was able to turn himself to the side, but unable to turn fully over and could not crawl, stand, or walk. The muscle strength of both upper arms were Grade 2+ and the lower limbs were Grade 2-. The tendon reflexes were weak but sensation was normal. Routine examination of heart, lungs, and abdomen showed no abnormalities, and vital signs were normal.

#### Treatment Schedule

Patient received 6 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	May 10, 2010	UCBSC	IV	none reported
2	May 14, 2010	UCBSC	LP	none reported
3	May 19, 2010	UCBSC	LP	none reported
4	May 24, 2010	UCBSC	LP	none reported
5	May 28, 2010	UCBSC	LP	none reported
6	June 2, 2010	UCBSC	IV	none reported

## Condition On Discharge

There was notable improvement in the boy's condition following his treatment. The doctors and physical therapist observed that he was able to hold his head straight up and he was able to speak with a stronger voice. The muscle strength in his upper arms had improved from grade 2+ before treatment to a Grade 3 on discharge and he was able to lift his arms above his head. The parents also noted improvement in their son's constipation problems, and said that he was having more regular bowel movements.

## Follow Up Information

**Condition 1 month after treatment:** The parents reported significant improvements in their son's condition and stated that: "He can keep his head straight, much more stronger. His femoral muscle is also stronger. He can pull up his leg straight while lying on the back; he was not able to do this before."

**Condition 3 months after treatment:** The patient still has improvements and the parents reported that his hands are stronger and that he uses them more often. He also has started to use his facial muscles and facial expressions. The parents stated: "We found that he uses mimicry while speaking. For example if you ask something, instead of just saying yes, he raises his eyebrows. We think it is great that he uses his muscles of his face."

BEIKE BIOTECHNOLOGY CO., LTD.  
9th Floor, Zhongke Building, 1 South Street  
South Area, Shenzhen Hi-Tech Industrial Park  
Shenzhen, China 518057

Tel: +86-755-8630-9277 Email: [info@beikebiotech.com](mailto:info@beikebiotech.com)  
Fax: +86-755-8630-9309 Web: [www.beikebiotech.com](http://www.beikebiotech.com)