

# BEIKE BIOTECHNOLOGY

## Patient Case Study

### Progressive Muscular Dystrophy

### Male, 12 years old, Jan - Feb 2011

#### Background

Age: 12 years old

Sex: Male

Nationality: American

Date of Admission: January 5, 2011

Date of Discharge: February 12, 2011

Treatment Center: Bethune International Peace Hospital, Shijiazhuang, China

Diagnosis on Admission: Progressive Muscular Dystrophy

#### Condition On Admission

Patient's main presenting complaint was of progressive motor impairment of the limbs starting 6 years previous. Upon admission, the patient was able to turn over and sit up by himself. He needed support to stand but could walk by himself with a staggering gait. The muscle strength of his upper limbs was a grade 4 for shoulder inflection and a grade 3 for shoulder extension. The lower limbs had muscle strength of grade 1 for hip inflection and extension and grade 3 for knee extension. The muscle tone of his limbs was lower than normal. All other routine examinations including for the heart, lungs, and abdomen showed no other abnormalities.

#### Treatment Schedule

Patient received 8 umbilical cord blood-derived stem cell (UCBSC) packets by intravenous (IV) injection and intra-muscular injection (IM) and as per schedule below:

Number	Date	Cell Type	Delivery Method	Side Effects
1	January 7, 2011	UCBSC	IV	none reported
2-3	January 12, 2011	UCBSC	IM (2 cell packets)	none reported
4	January 17, 2011	UCBSC	IV	none reported
5-6	January 26, 2011	UCBSC	IM (2 cell packets)	none reported
7	February 2, 2011	UCBSC	IV	none reported
8	February 7, 2011	UCBSC	IV	none reported

## Condition On Discharge

The patient experienced no adverse side effects following his treatment. His pre- and post-treatment blood tests showed a decrease in creatase levels (see table below). The doctors noted a small increase in muscles strength with muscle strength of his elbow inflection reaching a grade 4+ and elbow extension reaching a grade 3+. At discharge there were no other notable improvements.

Blood Creatase Test, January 5, 2011, Pre-Treatment		Blood Creatase Test, February 3, 2011, Post-Treatment	
CK-MB	66 U/L	CK-MB	66 U/L
CPK	1574 U/L	CPK	639 U/L
LDH	374 U/L	LDH	258 U/L
$\alpha$ -HBDH	232 U/L	$\alpha$ -HBDH	221 U/L

## Follow Up Information

**Condition 1 month after treatment:** The patient's family completed the one month post-treatment follow up survey and reported that they felt their son displayed moderate improvements in his condition. They were satisfied with the outcome of the treatment and also felt their son was still continuing to make improvements after one month. They stated, "He is improving in a daily basis. He can open a bag that is sealed, he can ride a stationary bicycle by his self, his posture has improved, his writing is more precise, better coordination, he does not get tired as fast."

Please see the excerpt below from their one month post-treatment assessment:

Symptom	Parents' Assessment of Improvement
Walking	Moderate improvement
Standing up	Small improvement
Walking up stairs	No improvement
Falls	Significant improvement
Loss of muscle mass	Not applicable
Enlarged muscles	Significant improvement
Muscle stiffness	Not applicable

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  
Fax: +86-755-8630-9309 Web: www.beikebiotech.com