

# BEIKE BIOTECHNOLOGY

## Patient Case Study

### Sensorineural Hearing Loss

Female, 19 years old, Sept - Oct 2010

#### Background

Age: 19 years old

Sex: Female

Nationality: American

Date of Admission: September 26, 2010

Date of Discharge: October 19, 2010

Treatment Center: Bethune International Peace Hospital, Shijiazhuang, China

Diagnosis on Admission: Sensorineural hearing loss

#### Condition On Admission

Chief complaint was of auditory impairment since birth. The patient had around 50% of normal hearing remaining. Auditory Brainstem Response (ABR) examination upon admission to the hospital in September, 2010 showed that the 'I' wave in both ears could not be elicited. The threshold of the left ear was 65dBnHL and the right ear was 60dBnHL. Hearing examination upon arrival showed that the frequencies in the right were abnormal. All frequencies were normal in the left ear except for 4KHz for which there was no reaction. The patient had no other medical problems and routine examination of heart, lungs, and abdomen were normal and vital signs were in the normal range.

#### 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. Patient received mild headache after two LP injections and these were treated with rehydration by IV with no further complications.

Number	Date	Cell Type	Delivery Method	Side Effects
1	September 28, 2010	UCBSC	IV	none reported
2	September 30, 2010	UCBSC	LP	headache
3	October 4, 2010	UCBSC	LP	none reported
4	October 9, 2010	UCBSC	LP	headache
5	October 13, 2010	UCBSC	LP	none reported
6	October 17, 2010	UCBSC	IV	none reported

## Condition On Discharge

There were no measurable improvements in the patient's hearing at discharge. The patient also could not notice any improvements but stated that his mother felt there were some small gains: "My mom has noticed very slight improvement in my hearing after all stem cell injections. I still don't notice any difference though."

## Follow Up Information

**Condition 3 months after treatment:** The patient reports that she is satisfied with the outcome of the treatment and she has experienced moderate improvements overall. She also feels that she is continuing to gain improvements at this time. On her assessment the patient stated, "Everything is going really good! I can now hear someone talking to me while in a different room, turning on a water faucet seems much louder, and my speech has significantly improved."

Below is an excerpt from the patient's 3 month follow up assessment. Shown are symptoms that the patient marked as improved:

Symptom	Parents' Assessment of Improvement
Ability to hear (left ear)	Small improvement
Ability to hear (right ear)	Small improvement
Hearing high tones	Small improvement
Hearing low tones	Small improvement
Distinguishing individual words/sounds	Small improvement
Following conversations	Small improvement
Hearing when there is background noise	Small improvement
Volume needed for TV/Radio	Small improvement

**Condition 6 months after treatment:** The small improvements mentioned in the 3 month report have continued and the patient has reported an overall gain of 10 dcb in her hearing. She feels at the 6 month time that these improvements are now stable and may have reached their peak.

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