HONG KONG SPINAL CORD INJURY FUND
香港脊髓損傷基金會

CHINASCINET
中國脊髓損傷研究協作組

Newsletter
January 2015 Issue

Update on ChinaSCINet SCI Clinical Trials

CN102b & CN102b-KM Trials Yield Promising Results for Chronic Spinal Cord Injury

No therapy yet has restored function to people with chronic spinal cord injury (SCI). Since 2010, ChinaSCINet conducted Phase I/II trials in Hong Kong (CN102b) and Kunming (CN102b-KM) to assess the safety and feasibility of umbilical cord blood mononuclear cell transplants, which were hypothesized to regenerate the spinal cord and improve recovery in people with chronic complete spinal cord injury. One year follow-up assessments of 28 spinal cord injury patients who were treated with cord blood mononuclear cell transplants showed promising results. These results support ChinaSCINet plans for a multicenter Phase III clinical trial to confirm the treatment effects.

In Hong Kong, Professor Waisang Poon, Chair Professor, and Chief of the Division of the Neurosurgery, Department of Surgery of the Chinese University of Hong Kong and Dr. Gilberto Leung, Clinical Associate Professor, Department of Surgery of the University of Hong Kong, and their respective teams studied the effects of umbilical cord blood mononuclear cell transplants in *8 people who averaged 13 years after complete spinal cord injury*. The trial has clinicaltrials.gov registry number NCT01046786. These 8 subjects were assigned into two groups and received 1.6 or 3.2 million cells transplanted into the spinal cord above and below the injury site. The two-year study showed that umbilical cord blood mononuclear cell transplants are safe. Clear magnetic resonance diffusion tensor images showed that presence of a gap at the injury site in five of five subjects before the cell transplant. *At 12-18 months after the cell transplants, DTI imaging showed that 2 of 5 subjects had fiber tract growth across the injury site*.

In Kunming, Dr. Hui Zhu and her colleagues completed the trial CN120b-KM to assess the effects of umbilical cord blood mononuclear cell transplants in *20 subjects who averaged 7 years after complete spinal cord injury*. The clincialtrials.gov registry number of the trial is NCT01354483. The subjects were randomly assigned into 5 treatment groups: 1.6, 3.2, or 6.4 million cell transplants; a combination of 6.4 million cells transplant and a bolus of methylprednisolone; and the 6.4 million cell transplant with methylprednisolone and a 6-week course of oral lithium carbonate. All 20 subjects participated in an intense walking training program for 3-6 months. *At 1.0-1.5 years, 15 of the 20 subjects (75%) could walk 10m in a rolling device with minimal or no assistance. Two subjects could walk over 10m without any assistance using a four-point walker. Five subjects converted from complete to sensory or motor incomplete. Over half of subjects improved their bowel and bladder care.* These results suggest umbilical cord blood mononuclear cell transplants are safe, improve walking, and increase independence in people with chronic complete spinal cord injury.

ChinaSCINet proposes to carry out a multicenter Phase III clinical trial (called CN103) in China to confirm the above treatment effects. This trial will study 120 subjects with chronic complete spinal cord injury, randomized to 4 groups: surgery only; surgery plus lithium; surgery plus transplant; or surgery plus transplant plus lithium. All subjects will participate

in 3-6 months of intensive locomotor training. This trial will be a surgically controlled clinical trial to assess the treatment effect of this cell transplant therapy. It will answer for following questions: 1) Does cell transplant improve walking recovery and independence compared to surgery alone? 2) Does surgery and lithium improve walking and independence compared to surgery alone? 3) Does lithium improve the effects of surgery and cell transplant on walking recovery? This trial will have a very substantial impact. *If the umbilical cord blood mononuclear cell transplants improve walking and independence, it will be the first effective therapy for chronic spinal cord injury. This trial may show that intensive walking training and surgery can improve recovery in chronic spinal cord injury subjects. This also would be valuable information*.

CN302 Trial to Study Oral Lithium for Treatment of Neuropathic Pain after Spinal Cord Injury

Neuropathic pain following spinal cord injury is common and debilitating. *Chronic neuropathic pain after spinal cord injury has been rated as one of the most difficult problems to manage*. Neuropathic pain results from abnormal central nervous system activity rather than external noxious sensations. Neuropathic pain after spinal cord injury often occurs in parts of the body where there is little sensation but can also occur above the injury site where sensation is present. Pain can lead to poor rehabilitation outcomes and reduce quality of life. Current medications have limited effects in the majority of spinal cord injured people with severe neuropathic pain.

In a previous ChinaSICNet Phase II randomized, double-blind, and placebo-controlled trial to assess the effect of lithium carbonate on neurological scores in people with chronic spinal cord injury, the *results suggested that a 6-week course of oral lithium might relieve neuropathic pain.* Pain intensity measured by Visual Analog Scale (VAS) not only was reduced at the end of 6 weeks oral lithium treatment, but remained low at 6 months, 4.5 months after the lithium carbonate was stopped. *Based on this clinical finding, ChinaSCINet initiated a Phase II trial in 2013 (CN302) to evaluate the potential treatment effect of lithium carbonate on neuropathic pain after spinal cord injury*.

Since July 2013, this trial has been recruiting spinal cord injured people, ages from 18 to 65 years, who have moderate to severe neuropathic pain for more than 6 weeks. The two study sites are the China Rehabilitation and Research Center in Beijing and Xi'an Jiaotong University Second Affiliated Hospital in Xian. Trial and investigators' contact information are available at clincialtrials.gov NCT01855594.

Enrolled subjects are randomly assigned to either a lithium carbonate or placebo control group for 6-week course. The study is double-blinded, i.e. neither doctors nor subjects know who is taking lithium carbonate or placebo. The subjects will receive several examinations during the 6-month follow-up assessment period. Pain scores and quality of life data will be collected to assess the effect of lithium carbonate treatment on neuropathic pain.

The CN302 trial will determine if lithium carbonate tablet will be effective for relieving neuropathic pain in people with spinal cord injury.

Conferences & Workshops

Umbilical Cord Blood Cell Processing Workshop, Jan 20-24, 2014, USA

Co-organized by ChinaSCINet, W. M. Keck Center for Collaborative Neuroscience at Rutgers University, and Stemcyte, Inc., *this workshop introduced and demonstrated the methods for processing and validating cells isolated from umbilical cord blood units for clinical application*. The workshop was held at both Stemcyte and the Keck Center in the USA. People from four Chinese laboratories attended the workshop to observe and learn the process. These laboratories agreed to participate in the CN103 multicenter spinal cord injury trial and will process the cord blood cells for transplantation.

6th International Spinal Cord Injury Treatments & Trials Symposium (ISCITT), Sept 6-8, 2014, Nanjing

The 6th ISCITT was held in conjunction with the 4th International Neural Regeneration Symposium and the 9th Asia Pacific Symposium on Neural Regeneration. ChinaSCINet was the co-organizer.

In this Joint Symposium, keynote speeches were given by Dr. Albert Aguayo, a pioneer in central nervous system, and Dr. Mary Bartlett Bunge, a renowned expert in Schwann cell transplants and a leader at The Miami Project to Cure Paralysis. Over 40 prominent scientists and clinicians presented the latest progress in neural regeneration, spinal cord injury, peripheral nerve injury, optic nerve regeneration, and, new frontiers in stem cell research.

In the clinical trial and regenerative medicine session, Dr. Wise Young presented the umbilical cord blood mononuclear cell therapy of chronic spinal cord injury clinical trial results; Dr. Lisa McKerracher described a Phase II trial design for using cethrin for cervical spinal cord injury; Dr. Rick Layer introduced the biocompatible scaffold to treat spinal cord injury; Dr. Brian Kwon introduced biomarkers of human spinal cord injury; Dr. Jianjun Li presented a surgical method for reconstructing breathing in patients with high level cervical spinal cord injury; and, Dr. Xijing He shared potential applications of magnetic resonance diffusion tensor imaging (MR-DTI) to evaluate the severity of spinal cord injuries.

The Symposium attracted nearly 400 participants and provided an opportunity and platform for cross-disciplinary interactions. The symposium had scientific sessions on clinical trials and round table discussions on translational research and regulatory requirements which facilitated dialogue on the translation of basic research into clinical application.

HKSCIFund Activities

Fundraising Gala Dinner and TV Variety Show, 28 June 2013

The HKSCIFund hosted a Gala Dinner and Fundraising Show on Asia Television Ltd (ATV) on 28 June 2013 to raise funds to support promising clinical trials for spinal cord injury and to promote the public awareness about spinal cord injury. It was our honour to have the Hon. C.Y. Leung, Chief Executive of HKSAR, the Hon. Dr. Ko Wing Man, Secretary for Food and Health of HKSAR, and famous Best Actress Ms. Carina Lau as our Guests of Honour to officiate at the opening ceremony. Many famous artists and singers, including Ms. Nishizaki Takako and Ms. Teresa Carpio, performed during the show. Prof. Wise Young and Prof. So Kwok-fai shared the progress and achievements of our recently funded clinical trials. Mr. So Wing Tong, Keke and Miss Ivy Zhang, who became life warriors after spinal cord injury, also shared their stories.

The Youth Difference Makers Award (YDMA) 2013-2014

Inspired by Rick Hansen's spirit of being a "Difference Maker", the Youth Difference Makers Award (YDMA) was first introduced by the HKSCIFund in 2011. The Youth Difference Makers Award (YDMA) 2013-2014 was organized by the Sir Edward Youde Scholars Association, co-organised by Direction Association for the Handicapped and the Hong Kong International Institute of Educational Leadership, with the Hong Kong Spinal Cord Injury Fund as a supporting organization. This one-year award aims to make the world a more caring, welcoming and harmonious place by providing opportunities for local primary and secondary school students to plan and exercise community projects that "Make a Difference in the lives of others" around the theme of spinal cord injury.

A press conference was held on 16 November 2013. Mr. Alfred Hui was designated as the YDMA ambassador to encourage schools and students to be more aware of SCI and prevention and to actively participate in the YDMA program. The final selection and award ceremony was held 22 March 2014. The YDMA winners were awarded an Exceptional Educational Trip, a two-day event held 28-29 July 2014, to visit the Disabled Olympics Sports Management Center, the GZ National Women's Wheelchair Basketball Team, and the GHM Institute of CNS Regeneration at Jinan University.

Support This Important Work

The ***China Spinal Cord Injury Network (ChinaSCINet)***, a non-profit organization, is the largest spinal cord injury clinical trial network in the world, comprised of more than 20 leading spinal cord injury centers in Mainland China, Hong Kong, and Taiwan. With the aim of accelerating the movement of therapies from laboratory to clinic, ChinaSCINet has been coordinating and sponsoring a series of clinical studies as well as organizing scientific meetings.

The ***Hong Kong Spinal Cord Injury Fund (HKSCIFund)*** was established in partnership with the ChinaSCINet. The objective of the HKSCIFund is to advance the development treatments for spinal cord injury and related conditions by supporting research and clinical trials for potential therapies around the world. The HKSCIFund Ltd. is a registered charitable organization in Hong Kong (Registered Charity Number: 918370).

We are seeking your help to support these clinical trials and activities and to bring hope to the spinal cord injured people and their families.

Ways to Donate

- Deposit to the HKSCIFund's Hang Seng Bank account: 773-515747-668
- Send crossed cheque payable to the 'Hong Kong Spinal Cord Injury Fund Limited' (Address: Room 803, Asia Orient Tower, 33 Lockhard Road, Wanchai, Hong Kong)
- Donation Hotline: (852) 2866-0809

Tax-deductible receipts will be issued for donations over HK$100.

"The establishment of China Spinal Cord Injury Network is to bring promising therapies for spinal cord injury from laboratory to people"

ChinaSCI Net
HKSCIFund
Newsletter
January 2015 Issue

Published by: China Spinal Cord Injury Network
Unit No.323, Building 16W, Hong Kong Science Park, Shatin, N.T.
Hong Kong Spinal Cord Injury Fund
Suite 1008, Prosperity Millennia Plaza, 663 King's Road, Quarry Bay, Hong Kong
Tel: (852) 2866 0809 Fax: (852) 2866 0928
www.chinascinet.org www.hkscifund.org