

THE GREATS TIMES

The Seoul National University Hospital Clinical Trials Center

Publisher: Yung-Jue Bang, MD, PhD, Director

Professor Dong-Wan Kim at ASCO 2014

Professor Dong-Wan Kim, MD, PhD, (Head of Oncology Clinical Trials Unit, SNUH) spoke at the 2014 Annual Meeting of the American Society of Clinical Oncology (ASCO). The meeting was held between May 30 and June 3 in Chicago, Illinois, USA.

On May 31, Prof. Kim gave a presentation about the outcomes of a clinical trial, where he served as the Principal Investigator, evaluating HM61713, a targeted anti-cancer drug under development by Hanmi Pharmaceutical, Seoul, Korea. The presentation titled "Targeting EGFR: The Next 10 Years", was made at the Clinical Science Symposium.

About HM61713

Speaking about HM61713, Prof. Kim stated that the drug selectively inhibits mutant

forms of EGFR (Epidermal Growth Factor Receptor) that play a critical role in the growth of cancer cells. The study was conducted in 48 lung cancer patients, with T790M mutations, who did not responded to prior EGFR TKI treatment. The results were promising; disease control was seen in 36 (75%) patients with 14 (29%) patients showing a decrease in the size of the tumor. "These result

indicate that HM61713 can be a potential treatment option for cancer for patients who have progressed from prior EGFR TKI treatment," noted Prof. Kim.

Prof. Kim made another presentation about ceritinib (Zykadia), a treatment for ALK positive non-small cell lung cancer (NSCLC). This presentation was given on June 2 during the session entitled "Lung Cancer – Non-

small Cell Metastatic".

Prof. Kim was the lead investigator in the phase I study of ceritinib (sponsor: Novartis), conducted in 246 patients with NSCLC. The study indicated an overall response rate (ORR) of 58.5 percent with the median progression-free survival (PFS) rate of 8.2 months. Also, 54 percent of 124 patients, whose cancer had me-

tastasized to the brain, had shown an ORR of 54 percent with the median PFS rate of 6.9 months. Furthermore, ceritinib reduced the size of tumors in patients with anaplastic lymphoma kinase (ALK) - positive NSCLC regardless of their previous treatments with an ALK inhibitor. The mentioned studies were conducted at the Seoul National University Hospital Clinical Trials Center.

Partnership With Celerion Continues to Grow

On May 13, 2014, Dr. Frederick Pritchard (Vice President, Global Clinical Research) and Mr. John Horkulak (Executive Director, Eurasian Site Operations) from Celerion visited the Biomedical Research Institute at Seoul National University Hospital (SNUH) to attend the Master Service Agreement (MSA) signing ceremony.

The MSA, signed by Dr. Pritchard and Prof. Yung-Jue Bang, establishes the general terms and conditions of State-ment of Work (SOW). Even though the SOW will be customized according to the requirements of each individual

study, this MSA will expedite the process by eliminating the need to negotiate basic terms and conditions of the SOW.

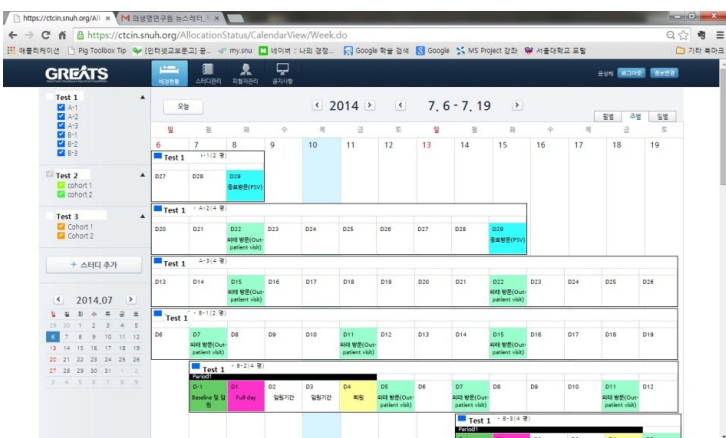
"I hope this is just the beginning of our collaboration," said Prof. Yung-Jue Bang. "I also look forward to this collaboration making our investigators busy with more studies." The signing ceremony was followed by a meeting with Dr. Chan Beals (Vice President, Clinical Pharmacology) and Ms. Tine Laetham (Executive Director, Head of Early Stage Development Europe) from Merck. They visited SNUH CTC to see the research capability in



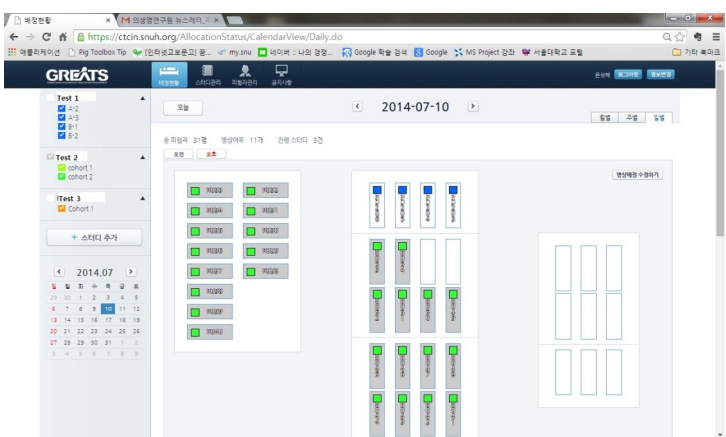
oncology as well as clinical pharmacology and to explore potential collaboration between Merck and SNUH. Other investigators, including

Prof. Yeong Wook Song (rheumatology) and Prof. Hyung Kwan Kim (cardiology), also joined this meeting.

Automated Bed Assignment System Officially Released



Picture #1 Research Schedule



Picture #2 Daily bed-assigning

The Seoul National University Hospital Clinical Trial Center (SNUH CTC) recently released the first version of a software program that helps in scheduling clinical research studies and automatically assigns clinical beds for each scheduled clinical trial.

As the number of clinical trials conducted at SNUH CTC increases and the study design becomes more complex, manual scheduling and bed assignment for studies has been a big concern due to high error rates and little flexibility. The new system helps users to

manage study scheduling based on the study design (Picture #1). Also, authorized users are allowed to check the study schedule from anywhere and at any time. Moreover, daily schedules can easily be checked to confirm what studies are ongoing and which individual is assigned to which clinical bed (Picture #2).

This system is expected to maximize the efficiency of clinical trials performed at SNUH CTC. The second round of development is scheduled for the upcoming fall.

Korea Became a Member of PIC/S in the Shortest Period of Time

According to the Korean Ministry of Food and Drug Safety (MFDS), MFDS has been approved to become a member of Pharmaceutical Inspection Convention and Pharmaceutical Inspection Co-operation Scheme (PIC/S) as of May 16, 2014.

Through this membership, Good Manufacturing Practice (GMP) in Korea, managed by MFDS, is proven to be at the global level. Therefore, it is expected that domestic pharmaceutical companies will have an easier access to the global market. MFDS is officially added to the charter of PIC/S as the 42th member on July 1, 2014.

MFDS applied to become a member in April 2012 and had submitted required documents for last two years until application was approved. MFDS has gained support for this approval through actively participating in international activities including ICH, ICMRA, etc. Also, MFDS has been focusing on strengthening standards and compliance. Considering that application process of FDA took about 5 years, the fact that MFDS successfully

became a member within 2 years is significant.

It is expected that this membership will allow Korea to enter Mutual Recognition Agreement (MRA) on GMP assessment conformity which will waive some GMP assessment processes in case of exporting medicine. Also, membership is a key to get prioritized in many members of the Association of South East Asian Nation (ASEAN) when choosing the companies to enter their domestic markets. Moreover, through active information sharing through the members of PIC/S, site audits could be replaced with reports. As a result, this membership is expected to increase confidence in reliability of GMP managed by Korean MFDS.

PIC/S is composed of two international organizations that promotes high standards among its members and improves cooperation between regulatory authorities and pharmaceutical companies in the field of GMP. Founded in 1995, PIC/S has 44 members from 41 countries.

UPCOMING EVENTS!

- ◆ **Consortium Workshop**
Date: August 7, 2014
Place: CUH Clinical Research Support Center
- ◆ **Exclusive Seminar by MFDS—GREATS**
Date: September 2014
- ◆ **Microdosing Symposium**
Date: November 2014

For the updates, please contact:

Sujin Rhee

Tel: +82 2 2072 1684

E-mail: sujinrhee@snuh.org

GREATS at the DIA 2014 50th Annual Meeting



Ms. Sujin Rhee (Global Business Development Associate) and her team visited San Diego, USA, to promote GREATS at the 50th Annual

Meeting of the Drug Information Association. The event was held at the San Diego Convention Center between June 16 and June 19.

During this event, thousands of professionals from around the world gathered to build a global network that will ultimately contribute to innova-

tions in the development of safe and effective medical products and therapies. There were many visitors flocking to the GREATS booth including the familiar faces of those who attended DIA 2013. The team was busy promoting GREATS and exploring possible future partnership opportunities. GREATS also conducted a short survey to find out what the customers want to know about South Korea and its clinical trial regulations and environment.

During the event, Prof. In-Jin Jang, Vice Director of SNUH CTC, made a presentation titled “Utilization of Asian Clinical Trial Data for Drug Development in Korea: Investigator’s Perspective”, which was well received by the audience.

New Partnership with CuraChem

On June 24, 2014, a Memorandum of Understanding (MOU) was signed between CuraChem and Seoul National University Hospital (SNUH) Clinical Trials Center. CuraChem is a contract manufacturing organization that specializes in Carbon-14/Tritium radio-labeling and stable isotope labeling. The organization has a large market share in Japan. Early this year, a group of clinical pharmacologists at SNUH, under Prof. Howard Lee, successfully completed a microdosing study for the first time in Korea. It is expected that this MOU will boost the scientific



leadership of SNUH to the next level.

“It is our pleasure to enter into new collaboration with SNUH. SNUH offers the best

researchers and research facilities in Korea,” said Ms. Sook Jung Shin, President of CuraChem, who attended the signing ceremony along with Dr.

Yun Sik Kim, Vice President of CuraChem. “Our next step will be working hard for active microdosing studies”, she added.

“I hope our collaboration through this MOU will result in the growth of both institutions by performing more microdosing studies,” said Prof. Yung-Jue Bang, President of

Biomedical Research Institute at SNUH.

Leaders Gathered to Look for Ways to Collaborate

On May 16, 2014, a meeting of the members of the global center of excellence consortium was held at the Biomedical Institute at Seoul National University Hospital. Prof. Jong-seok Lee from Seoul National University Bundang Hospital (SNUBH), Prof. Tae Sun Park from Chonbuk University Hospital (CUH) and their staff graced the meeting to discuss how to maximize synergy effects through collaboration.

The consortium was originally created to focus on early clinical trials for the government program called Global Center of Excellence. Each hospital came up with its own strategy such as targeting herbal and natural medicines (CUH) and drug development in elderly people (SNUBH). This meeting reminded attendees of the

initial goals and approaches that were planned out right at the beginning of the program.

The meeting began with a presentation by Prof. Howard Lee from SNUH, followed by Prof. Jae-Yong Chung

(SNUBH) and Prof. Min-Gul Kim (CUH). During the presentation, they went over the comments received from the annual evaluation report and shared strategies for the weak areas that were pointed out. After the presentations, there was a discussion over how the consortium could grow through members helping each other, since each hospital has its own strengths. Also, it was suggested that there should be frequent meetings and workshops between the three hospitals, giving them an opportunity to share progress reports.

The next meeting of the consortium is expected to be held during the first few weeks of August to evaluate the follow-up of the goals shared during the May 16 meeting.



GREATS' Network is Still Expanding!



June was a busy month for SNUH CTC as it was expanding its network by signing MOUs with different pharmaceutical companies including Boryung Pharmaceutical, Hanmi Pharmaceutical, and LG Life Sciences. These MOUs will allow SNUH CTC to grow through information sharing and training programs. By main-

taining a close relationship with major companies within the field, SNUH CTC gets an opportunity to learn about different types of infrastructure, use of resources, facilities, and practices in the pharmaceutical industry. Such exposure can also help SNUH CTC improve itself. As a leading clinical trials center in Ko-

rea, SNUH CTC makes every effort to stay up to date and among the top players of the field. SNUH CTC believes that networking expansion will ultimately lead the center to become the world's leading early clinical center.



If you would like to visit us, please contact:

Sujin Rhee

Tel: +82 2 2072 1684

E-mail: sujinrhee@snuh.org

Introducing Seoul National University Bundang Hospital CTC!

Since its inception in 2003, Seoul National University Bundang Hospital (SNUBH) - originally designed to be a senior specialized hospital – has been leading the field of medical care for the elderly. It is the only hospital in Korea which applies a comprehensive geriatric assessment, a tool for evaluating senior citizen, to clinical research. Furthermore, it was designated the title “global center of excellence in the elderly clinical trials” by the Korean Ministry of Health and Welfare in November 2012. The title was given based on a molecular imaging center specializing in new drug development, the distinguished IT infrastructure leading domestic EMR field, and a large elderly patient pool.

Celebrating Facility Expansion



Despite the short period of time the organization has been in operation, SNUBH CTC has shown a rapid growth in the field with top-ranked investigators and has become a well-respected center in Korea. Through its facility expansion in March 2014, SNUBH CTC has moved towards its goal of building infrastructure at global level. Also, by promoting its strength in the elderly medical care, it increased its value as a senior specialized hospital.

Introducing Department of Clinical Pharmacology and Therapeutics

Department of Clinical Pharmacology and Therapeutics at SNUBH is proud to have a team of experienced investigators responsible for phase 1 clinical trials and pharmacokinetics / pharmacodynamics (PK/PD) studies. The investigators have also been collaborating with SNUH in developing educational programs and studies. One of their major achievements is the First-in-Human (FIH) study of non-opioid/multi-target analgesic XXX. It is very remarkable since it is the first phase 1 clinical trial conducted using new class mechanism for domestically developed drugs. They are currently conducting clinical trials with adults and seniors for safety and PK/PD of XXX, followed by a successful clinical trial with healthy volunteers.



Memorandum of Understanding (MOU) with PPD



In June 2014, SNUBH CTC and Pharmaceutical Product Development (PPD), a global Contract Research Organization (CRO), signed a MOU for mutual cooperation in clinical trial studies. PPD is a global corporation specialized in providing clinical research services, including clinical development, laboratories as well as consultation. Through this collaboration, SNUBH CTC and PPD expect to grow together in the field of clinical trials by information and knowledge exchange as well as professional training programs.

Introducing Chonbuk University Hospital Global Center of Excellence!

In November 2012, Chonbuk University Hospital Clinical Trials Center (CUH CTC) was designated as the Global Center of Excellence in clinical trials based on early natural medicine with the purpose of strengthening the capacity of national clinical research and creating a globally relevant business model. The designation came with a five-year project which is to conclude in March 2017. Natural medicine is an emerging field of study in drug development, and the number and size of clinical trials within this area is gradually increasing.

Domestic non-clinical/clinical trials involving natural medicine in terms of technology, size and revenue generation have not been competitive in the global market, and the Korea Good Manufacturing Practice (KGMP) has lower standards compared to those of other developed nations. As a result, domestic Contract Research Organizations (CROs) and Contract Manufacturing Organizations (CMOs) have not been attractive in the global market. Consequently, this is “the” time to standardize production processes and set up quality control standards for the development of natural medicine by expanding clinical trials support centers.

CUH CTC strives to build infrastructure and facilities that match global standards of quality and train professionals for the future. The center also contributes to the competitiveness of clinical trials conducted by the country in the global market by exploring the use of technology in natural medicine.

Research Infrastructure



By establishing a new Clinical Research Support Center, CUH CTC has created a sophisticated clinical trial system that comprises of 60 clinical beds, 8 outpatient clinics, and 8 monitoring rooms fully dedicated to clinical research.

Service

CUH CTC boasts a vast experience in conducting many clinical trials not only with domestic, but also with global pharmaceutical companies. Its expertise in clinical research has been proved through numerous audits and inspections. For example, it is the first center in Korea to have been inspected under a pre-qualification program by the World Health Organization (WHO). CUH CTC provides a wide range of services including management of clinical trials electronic records, Statistical Analysis Plan (SAP) and statistics, pharmacokinetic and statistic reporting (WinNonlin®, SAS®, SPSS®), modeling & simulation (Phoenix WinNonlin Software, NONMEN® with PDx-POP, NLME™

Human Resources



Since CUH CTC believes in the importance of expertise due to the characteristics of clinical trials, it focuses on offering professional training programs that meet global standards. Through holding symposiums, workshops, and seminars, the center analyzes the global trend within the industry.

CUH CTC also works towards strengthening the relationship between professionals in the field by building a network through the Global Botanical

Drug Development Center (GBDDC) which works with several domestic and global pharmaceutical firms.