

THE GREATS TIMES

The Seoul National University Hospital Clinical Trials Center

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

IT WAS SO NICE TO SEE YOU ALL!

**DIA 2016 Annual Meeting
At Pennsylvania Convention Center, Philadelphia, PA**



From June 26th to 30th, Seoul National University Hospital participated in DIA2016, held in Philadelphia. The top five hospitals in Korea and two national organizations affiliated with the government's clinical trials projects (a total of 23 representatives and spokespeople, including the PI) attended as team South Korea. Throughout the conference days (three days, June 27th~30th), team Korea met approximately 200 clinical trials industry professionals and had informative discussions about potential future collaboration.

We actively promoted the robust clinical trials capacity of South Korea. Seoul Nation University Hospital Clinical Trials Center (SNUH CTC) showed a brief video clip about the research capacity of SNUH CTC to the people who visited the booth and explained with the information contained the brochure in more detail. In addition, we visited world-class pharmaceutical companies and related booths to learn about the latest technologies and clinical trends around the world. We also actively promoted the SNUH CTC efforts to attract future visits and research.

On the evening of June 28th, there was a closed party thrown by team Korea for key personnel amongst the DIA2016 attendees. The title of the event was "Start with Korea: The Right Place for Clinical Trials in Asia." The PI representing each institution and the director of KoNECT explained the capabilities of South Korea (various therapeutic areas), which is gradually turning into the center of Asian regional clinical trials. Dr. Howard Lee (Head of Global Strategy Planning team, SNUH CTC) gave a lecture about the clinical capacity and future opportunities of South Korea, followed by SNUH's blueprint.

The DIA 2016 52nd Annual Meeting is the largest global interdisciplinary event that brings together 7,000+ key thought leaders and innovators from industry, academia, regulatory and government agencies, healthcare, the patient community, and philanthropic organizations from around the globe - and across all disciplines - who are all involved in the discovery, development, and lifecycle management of healthcare products.





[Director's Corner] Prof. Yung-Jue Bang

This phase I study aimed to assess the safety and activity of the anti-PD-1 antibody pembrolizumab, one of the immune check-point inhibitors, in 39 patients with PD-L1-positive recurrent or metastatic adenocarcinoma of the stomach or gastro-esophageal junction.

Twenty-two percent of the patients were judged to have had an overall response at central review, and the median duration of response was 40 weeks. Median overall survival was 11.4 months, and the proportion of patients alive at 12 months was 42%.

Most of the adverse events were manageable, and no treatment-related deaths occurred. In addition, a positive association was observed between the expression of anti-PD-1 antibody and interferon γ gene signature.

This study strongly suggested that pembrolizumab can lead to durable survival for the first time, which warrants further study in phase 2 and 3 trials of various immune checkpoint inhibitors.

The results of this study were published in *The Lancet Oncology*.

Another Possibility for Lung Cancer Patients

A clinical study has proven that a next-generation targeted agent for ALK positive lung cancer is "effective." Professor Kim Dong-wan at SNUH published the results in *The Lancet Oncology*.

The released research findings showed that Ceritinib, a targeted agent, is effective in treating ALK positive lung cancer and preventing brain metastasis.

An article published by Professor Kim Dong-Wan of the Department of Oncology at Seoul National University Hospital (SNUH) as the lead author shows the final analysis results of the ASCEND-1 research conducted on patients with ALK positive lung cancer at 20 hospitals in 11 countries.

This paper was published in the latest issue (3/11, online) of *The Lancet Oncology* (IF=24.690), a major journal in the field of oncology. The research team assessed the treatment effects and safety of Ceritinib, a next-generation ALK inhibitor, by administering 750 mg of Ceritinib every day to 246 patients with progressive ALK positive lung cancer. As a result, the size of the tumor was significantly reduced in 72% of patients who had not taken other ALK inhibitors in the past and in 56% of patients who had taken other ALK inhibitors. The effect lasted for 17.0 months in patients who had not taken other ALK inhibitors in the past and for 8.3 months in patients who had. This represents a long treatment effect.

It was also effective in inhibiting the progress of brain metastasis in about 70% of patients. Ceritinib's common adverse effects include diarrhea, nausea, and an increase in liver enzyme levels. Professor Dong-Wan Kim said, "Ceritinib was found effective in patients with ALK positive lung cancer, who account for 5% of the overall lung cancer patients and who are resistant to existing ALK

inhibitors; and, this next-generation ALK inhibitor may act as an excellent primary medicine. A phase II study is currently underway to verify the Ceritinib effect in patients with brain metastasis."

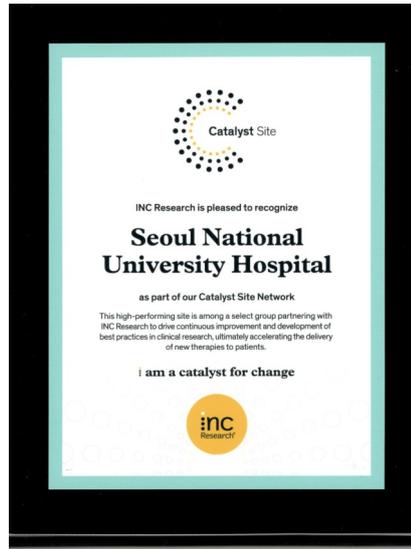
Lung cancer is the fourth most common cancer (10.3%) in Korean patients (202,053) as of 2010. People are afraid of this disease due to its poor prognosis; the five-year survival rate is merely 19.7%. ALK positive lung cancer is caused by a mutation in the ALK gene that converges with the EML4 gene. If the two genes converge, ALK gene signals rapid cell growth. The cell that receives the signal transforms itself into a cancer cell. Ceritinib blocks the signal and induces the death of cancer cells.



[Professor. Dong-Wan Kim]

Member of Medical Oncology Center,
Head of Oncology Clinical Trials Center

Seoul Natl' Univ. Hospital's World-renown Capability



SNUH CTC is proudly present that our center/hospital has chosen as the winner of INC Research award and as one of the Catalyst Site Network institute. SNUH(CTC) is the first to given in South Korea. The INC Research Catalyst Site Network is a select group of high-performing sites from the globe that connects both clinical trials related part and the institutes.

Seoul Natl' Univ. Hospital's Capability in Statistics

Rank	Hospital	Number of Studies Past 5 Years	Country
1	University of Texas – MD Anderson	1,025	US
2	Dana-Farber Cancer Institute	661	US
3	Seoul National University	658	Korea
4	Massachusetts General Hospital	630	US
5	Memorial Sloan-Kettering Cancer	621	US

Source: Citeline Site Trove (as of Feb 1st 2016)

ranked in 3rd place among the Top 10 global clinical investigators' sites based on numbers of studies in past 5 years in the oncology area.

If we break this range into the Top 5 ranking programs, SNUH is the only Korean Hospital on the list, followed by a large global hospital and institute such as MD Anderson and Dana-Farber Cancer Institute. This demonstrates that SNUH (and SNUH CTC) has what it takes to be a state-of-the-art clinical trial environment that meets global standards.

Currently, SNUH CTC's capability was recognized and raised global attention due to the statistics provided by Citeline SiteTrove (as of Feb 1st 2016). According to this analysis, Seoul Natl' Univ. Hospital

SNUH proved that it fulfils the "Technology positive environment" requirement, including high volume patient access, medical sophistication and research interests, molecular testing/scientific innovation and investment.

SNUH CTC Renovation Plan



SNUH CTC is planning to reveal the new look of the clinical trials center by midterm of 2017. We are trying our best to build the most efficient and effective trial environment as possible, not only for investigators but also participants (every person who involved to the trials). We always insist and welcome you all to visit our new facility next year.

UPCOMING EVENTS! Save the Date!

- ◆ **Round-table Conference for Local Sponsors, CRO and MFDS (Ministry of Food & Drug Safety)**
Date: September 22nd, 2016
Place: CMI SeoSungHwan Hall (Lobby Fl)
- ◆ **Round-table Conference for Global Sponsors, CRO and MFDS (Ministry of Food & Drug Safety)**
Date: November 8th, 2016
Place: Biomedical Research Institute Auditorium B (5th Fl)

If you would like to visit us, please contact: Theresa Choi

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Introducing Seoul Natl' Univ. Hospital Medical Device Center!

SNUH UTC 의료기기 사용적합성 테스트센터 MEDICAL DEVICE USABILITY TESTING CENTER

[SNUH MDIC] Medical Device Innovation Center (MDIC), part of the Seoul National University Hospital Biomedical Research Institute (SNUH BRI), was first founded in 2007 as a Division of Medical Device Clinical Trials. In 2008, the Ministry of Food and Drug Safety (MFDS/Korean FDA) granted MDIC the government project (fund) to establish the Medical Device Clinical Trial Centers. MFDS started to build the infrastructure and set the foundation of the center. Professor Seung-June Oh has been the director

of MDIC since April 2013. Ever since, the number of medical device clinical trials has continuously increased, leading to in the selection of MDIC for various national R&D projects. As a result, MDIC has become the best medical device clinical trials center in Korea. In 2016, the Division of Medical Device Clinical Trials achieved independence from SNUH CTC organization and became the Medical Device Innovation Center as part of BRI.



Usability Test Center. Seoul National University Hospital medical device Usability Testing Center (SNUH UTC) is Korea's first and only Medical Device Usability Testing Center. Understanding how people interact with technology, and studying how user interface design affects the interactions people have with technology, is the focus of the usability test. For medical devices, the most important goal of the usability test is to minimize user-related hazards and risks and to find the most effective and safest methods for users.

Since obtaining the international standard of medical electronic equipment, the IEC 60601-1 3rd became mandatory, with the usability test considered an essential requirement for the product design process. However, many medical device manufacturers had no such option to get this process done, though they were clearly aware that they were obliged

to do so (especially the usability test).

Therefore, MFDS and the Korean Health Industry Development Institute aimed to support the usability-related business of the company through the 'Medical Device Usability Infrastructure Building Project' beginning in early 2015. SNUH UTC is the first test center granted for this project.

The center was established to support domestic medical device companies to enter the global market by using the infrastructure of SNUH. SNUH UTC declared its goal to 'Contribute to raise the brand value of domestic medical devices,' 'Provide one-stop global service that meets international standards,' 'Pursue publicness and openness,' and 'Contribute to globalization of the domestic medical device business.'

[PreMIER Center] Premium Medical Imaging Equipment Research Center

The Medical Device Innovation Center (MDIC) aimed to improve domestic medical imaging devices and produce world-class medical imaging devices. To perform the tasks mentioned above, we established the Premium Medical Imaging Equipment Research (PreMIER) Center within the MDIC.

The PreMIER center supports companies and investigators in every stage of medical device development, from the first stage of initial idea presentation to the final stage of market entry. The PreMIER center provides two very specialized services. The RA (Regulatory Affairs) team provides assistance through device approval and provides clinical trial fund (offering a maximum of ₩50,000,000 per year just for medical image device clinical trials).



Introducing Seoul National University Bundang Hospital CTC!

Building New Collaboration Network



Seoul National University Bundang Hospital Clinical Trial Center (SNUBH CTC) signed the strategic 'Site Alliances' clinical trials partnership contract with the global Contract Research Organization (CRO), PAREXEL, which operates 78 offices in 52 countries. The organizations agreed to discuss and cooperate through a Dedicated Relationship Manager with regard to data review and study feasibility. SNUBH expects an increase in multi-country clinical trials and expects to attract opportunities through this partnership.

SNUBH entered into an agreement with global CRO Quintiles as a prime site in November 2012. Additionally, the director of SNUBH CTC, Professor Jong-Seok Lee, was designated as an investigator of the Quintiles Asia Pacific _ Phase 1 Oncology Initiative this July. SNUBH CTC is continuously striving to become a global research-driven hospital (clinical trials center) by establishing a cooperative system with a world-renowned CRO and industry through its advanced research capability.



분당서울대학교병원 임상시험센터
SEOUL NATIONAL UNIVERSITY BUNDANG HOSPITAL CLINICAL TRIALS CENTER

Introducing Chonbuk University Hospital Global Center of Excellence!



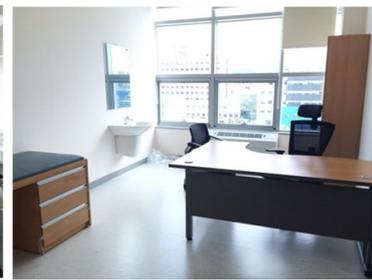
Chonbuk National University Hospital (CUH Global Center of Excellence) tried to improve its clinical data management skills by building the Medidata Clinical Cloud System (electronic data capture, EDC), a global leader in electronic data processing systems in order to meet international standards of clinical trial data management.

On March 2016, CUH attended CDISC public training (SDTM, CDASH). It was an opportunity to learn and practice SDTM and CDISC's basic purpose of use and to fully grasp clinical trial data management and analysis concepts. Based on this experience, CUH gave a lecture on the Medidata Clinical Cloud to investigators and researchers of SNUBH (Seoul Natl' Univ. Bundang Hospital).

In addition, Professor. Min-Gul Kim (Assistant Professor, CUH Dept. Clinical Pharmacology) gave an informative lecture to pharmaceutical companies, offering an example of real usage of Medidata as applied to clinical trials during the Medidata Symposium Korea 2016.

Chonbuk National University Hospital (CUH Global Center of Excellence) is striving to satisfy global standards and needs by establishing an electronic case records (Electronic Case Report Form; eCRF) system that meets global regulations such as FDA 21 CFR Part 11, which improves the quality of the clinical data analysis performed by CUH.

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™, e-CRF system, Data Entry, Validation.