The role of Trp53 and the Keap1-Nrf2 Pathway in Airway Stem Cell Self-renewal and Lung Squamous Cell Carcinoma Pathogenesis

Youngtae Jeong, M.D. (2001)
Ngoc Hoang, Andrew Gentles, Henning Stehr,
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Despite its high incidence and mortality, treatment options for lung squamous cell carcinoma (LSCC) remain limited and its pathogenesis, including the cell of origin, remains poorly understood. We therefore set out to establish a clinically relevant murine model of LSCC and explored the role of Trp53 and the Keap1-Nrf2 pathway, which are mutated in nearly all and over one third of human LSCCs, respectively.

Biallelic inactivation of Trp53 or Keap1 promoted airway basal stem cell (ABSC) self-renewal in in vitro tracheosphere assay and in our novel ABSC lineage tracing in vivo. Loss of Trp53 with or without Keap1 in tracheal epithelial cells produced tumors with metastatic potential that displayed histological and molecular features of human LSCCs. Compared to Trp53 null tumors, Keap1;TP53 null tumors displayed accelerated tumor initiation and growth and were resistant to oxidative stress and ionizing radiation. Finally, we found that only airway basal stem cells, and not more differentiated cells, have the capacity to initiate LSCCs and are the likely cell of origin of these tumors. Thus, the Keap1-Nrf2 pathway plays a critical role in LSCC and represents a potential target for personalizing therapies and improving outcomes for this disease.

Youngtae Jeong (01) Cancer Biology
CIRM Postdoctoral fellow
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Subsequent to the internship training at SNUH, Dr. Youngtae Jeong decided to pursue his career in basic science research completing graduate studies and obtaining Ph.D. in cardiovascular inflammation at the Johns Hopkins University School of Medicine. He then studied developmental hematology as a postdoctoral fellow at the Whitehead Institute affiliated with MIT, during which time he became especially interested in stem cell and cancer biology. Currently, he studies epithelial stem cell biology, focusing on airway and esophageal stem cells & lung and esophageal cancers at Stanford Cancer Institute. While he enjoys Californian weather with hiking and other outdoor activities, he wants to pursue his future as an academic researcher in East Asia or North America.

June 5,2015;11:45 - 12:00

The Roles of Quality Measures in the Value-Focused Healthcare System

Kyung Min Song M.D., MPH, MBA (2009)
Manager, Evidence, Translation, & Implementation
Avalere Health LLC, Washington DC

The United States spends on healthcare more than any other countries in the world, and the rate of healthcare spending increase also exceeds that of many countries. However, the high cost has not been translated into the quality of care or the overall health of the population. The traditional U.S. healthcare system has been plagued by inefficiencies resulting from misaligned incentives, fragmentation of care and lack of communication. However, a new era has arrived with the enactment of the Affordable Care Act. Major payers, both private and public, have announced their plans to tie major portion of the payment to providers who provide high quality care.

Accurate quality measurement, therefore, is a critical component of this new value-based healthcare system, and it should be able to establish the baseline and track the progress. Then, how can quality of care be objectively assessed? This is where quality measures come into play. Quality measures are tools that can measure healthcare processes, outcomes, and organizational structures or systems that are associated with the ability to provide high quality health care.

In this presentation, I would like to explore how quality measures are developed, tested, endorsed and used by various stakeholders as well as the extent to which quality measures can impact the new healthcare system.

Kyung Min (Minnie) Song (09)
Manager, Evidence Translation & Implementation
Avalere Health, Washington DC

Dr. Minnie Song has obtained a MPH and MBA from the Johns Hopkins University after she graduated from the Seoul National University College of Medicine, Seoul, South Korea. Prior to joining Avalere, she worked as a Project Manager in Global Health Outcomes at Merck & Co. managing observational studies and utilizing cost-effectiveness models to support product launches. Additionally, she has provided research support to International Vaccine Access Center at the Johns Hopkins Bloomberg School of Public Health. Dr. Song also has served as a Medical Officer in Korea's Centers for Disease Control & Prevention, revising and implementing new national immunization standards and developing vaccination action plans related to disease outbreaks. Currently, Dr. Song is Manager in Evidence Translation & Implementation practice at Avalere Health, a health policy advisory and business strategy firm based in Washington, D.C. She advises a variety of healthcare stakeholders on generation and implementation of evidence-based strategies for evaluating quality of care and linking it to payment and value creation. She applies her background in life science, public health and business to lead various projects. Dr. Song also brings expertise in clinical medicine, outcomes research and global health with a focus on infectious diseases and vaccine development.

Immunotherapy of Cancer

Yong-Sung Choi, M.D. (1961)
Distinguished Investigator, Ochsner Clinic Foundation, New Orleans, LA

Chemotherapy has been the major treatment of cancer for more than fifty years. This treatment was developed to suppress the cell division of caner cells, assuming that tumor cells divided faster than normal cells. However, the division rate of cancer cells is not different from that of normal cells, and the most common cause of cancer death is not the size of tumor growth but bacterial infection. The cancer patients become weak after chemotherapy for several months, succumbing to bacterial infection, because the chemotherapy not only suppresses tumor cell growth but also normal cells, particularly, lymphocytes.

Lymphocytes are essential for the bodily defense against infection and cancer. Among lymphocytes, there are two subpopulations; bone marrow derived B cells and thymus derived T cells. B cells fight against bacterial infection by producing antibodies while T cells fight against viral infection and cancer cells by attacking virus infected cells and cancer cells directly.

The balanced homeostasis of these lymphocytes is essential for maintenance of health, as evidenced in autoimmune diseases, immune deficiency diseases (hereditary or acquired), and most recently in cancer therapy.

Cancer cells are generated everyday by mutation of normal cells by carcinogen in our life. Why do some people develop cancer (one out of four) while majority (three out of four) do not? I will discuss this question and the currently most effective immunotherapy of cancers. There has been a major breakthrough in the clinical trial of immunotherapy last five years. Finally we are seeing a light after the "declaration of war against cancer" by president, Nixon forty years ago.

Kang Shinho, M.D. Lectureship

Liver Transplantation: Challenges and Contribution

Yoogoo Kang, M.D. (1971)
Professor, Anesthesiology, Thomas Jefferson University, Philadelphia, PA

Liver transplantation was believed to be "what is exactly needed for patients with end-stage liver disease", and the first successful orthotopic liver transplantation was performed in a three-year old child with biliary atresia in 1963. Two major liver transplantation centers (Denver and Cambridge) met almost insurmountable challenges from the outset. Mortality was extremely high due to technical difficulty in major hepatic surgery, primitive anesthesia and intensive care, poor organ preservation, inadequate immunosuppression, and devastating infection. However, their keen observations on their failure of 20 years laid the foundation of modern liver transplantation.

A breakthrough was made in the 1980s at Pittsburgh through a multidisciplinary approach. Venovenous bypass reduced blood loss from mega to massive transfusion, cyclosporine was a superior immunosuppressant compared with azathioprine, and liver intensive care unit was developed. Major breakthrough was made in anesthesiology through clinical research in monitoring and treatment of coagulation, cardiopulmonary function, and cerebral metabolism and blood flow, to name a few.

Another major advance was made in the 1990s. Removing the diseased liver without a portion of the IVC was possible to make the surgical procedure simpler, FK 506 (tacrolimus) was found to be a superior agent compared with cyclosporine, and anesthesia and intensive care were further refined. Wisconsin solution extended the liver preservation period up to 16-24 hours.

In the past 15 years, liver transplantation has become a doable procedure with greater than 85% one-year survival, and Asan Medical Center and SNUH are leaders in living donor liver transplantation.

Liver transplantation has made a great deal of contribution to all fields of medicine similar to what the space program helped to develop a modern society. It clarified pathophysiology of end-stage liver disease. Unsuccessful liver transplantation in patients with hepatitis B and C and hepatocellular carcinoma led to the development of the antiviral therapy and adjuvant therapy, respectively. Many hereditary diseases that were believed to be unrelated with the liver were cured by liver transplantation. It stimulated research in immunology, and xenograft liver transplantation was attempted. Dr. Starzl believed that surgery is a bridge to non-surgical care, and I hope this may become reality in a near future.

Acute Lymphoblastic Leukemia in Children: Past, Present and Future

Hyo Seop Ahn, M.D. (1971)
Professor Emeritus of Seoul National University College of Medicine
Professor, Cancer Center, Bundang Seoul National University Hospital, Seoul, Korea

The cure rate of acute lymphoblastic leukemia (ALL) in children has dramatically improved over the past five decades from zero to approximately 80%. This advance is mainly attributed to the development of chemotherapy by multicenter clinical trials of large study groups, based on a profound understanding of the biology of leukemia.

The essential element of ALL treatment is patient risk stratification and tailored therapy according to the risk groups. Risk groups are distinguished by prognostic factors and are usually divided into standard- (low- plus intermediate), high- and very high-risk group. Traditionally, clinical factors such as age and leukocyte count, biologic factors including immunophenotype and cytogenetic aberrations and response to treatment were used as prognostic factors in risk stratification. However, recent advancements in molecular genetics such as high-resolution genome-wide analyses have identified many novel subtypes of leukemia and provided new insights into leukemogenesis. Also, more precise personalized therapy has become possible with advancements in molecular techniques in detecting minimal residual disease and personal pharmacogenomics.

In Korea, the first nationwide multi-center clinical studies for high-risk, very high-risk and relapsed pediatric ALL was launched from 2005 to 2014 through the support by a grant from the National R&D Program for Cancer Control, Ministry for Health and Welfare. We were able to recruit clinicians from nationwide multi-centers, and efforts to collaborate on a treatment protocol of pediatric ALL were initiated for the first time. Through this trial, the survival rates of pediatric ALL patients appeared to significantly improve. Currently, second clinical trials for further improvement have been underway since 2014.

In the future, cutting-edge techniques and development of novel monoclonal antibodies, small molecule inhibitors, chemotherapeutics, and cell-based immunotherapy strategies could enable more precise risk stratification and ultimately further advance cure rates and improve the quality of life for patients.

June 5,2015;2:10-2:35

Diagnosis and Effective Management of Adhesive Capsulitis (Frozen Shoulder)

Peter Kang-Woo Lee, M.D., Ph.D. (1974)
Professor Emeritus of SungKyunKwan Univ. of School of Medicine, Seoul, Korea
President, Daegu Wokers' Compensation Hospital, Daegu, Korea

Adhesive Capsulitis(AC) commonly referred to frozen shoulder(FS) in one of the common musculoskeletal problem. The pathophysiology of FS continues to be mysterious, especially primary or idiopathic FS. Secondly, FS may reveal shoulder symptomatology such as traumas, surgery or long standing immobilization. Most common clinical pictures are initial pain followed by a progress loss of active and passive range of motion (ROM) of shoulder.
FS divided into three clinical phases. In Phase 1 (Pain phase), nocturnal pain progresses to resting pain, and it lasts 3-9 months. In Phase 2 (Frozen or Adhesive phase), pain is somewhat improved. However, AROM and PROM are limited, and this phase lasts 3-9 months. In Phase 3 (Thawing or Progressive phase), pain subsides progressively, and ROM is somewhat improved. This phase lasts 12-24 months.

In primary FS, the disease process starts at the synovial membrane of inner-layer of shoulder capsule possibly by an immunological process and actively progresses to hyperplastic fibroplasia of outer-layer of shoulder capsule. Also specific genetic abnormalities are frequently identified in trisomy7 and trisomy8. Autonomic sympathetic dysfunction in the upper extremities may play a role, and some believe that FS and CRPS1 are same clinical entities. Neurologic mechanisms play a role in developing pain associated with FS. The conditions most commonly associated with idiopathic FS are 1) diabetes, 2) hyperthyroidism, 3) Hypertriglyceridemia, 4) CVA with upper-extremity paresis, 5) brachial plexus injury, 6) cervical spinal cord injury, 7) Parkinson's disease, and 8) long-standing immobilization due to other poor medical condition.

Clinical finding are shoulder pain and limited active and passive ROM, especially in rotation and abduction. None of laboratory findings or imaging study is pathognomic, but simple Xray or soft tissue ultrasound examination are performed to rule out rotator cuff injury, abnormal calcification, bursitis, or other degenerating joint condition.

Treatment for FS begins with pain control using combined injection of anesthetic agents and steroid. Rehabilitation program must start as soon as possible because early intervention results in better outcome. A therapeutic exercise program with the supervision of physical therapist is followed by the home exercise program. In my experience, the manipulation technique by a skilled therapist is most effective to regain ROM of shoulder. At least 30 min of intensive manipulation after deep heat therapy 5 times per week for 4 weeks (20 sessions) followed by exercise is most successful to regain ROM in chronically disabled patients. Intra-articular and intrabursal injection of steroid is somewhat beneficial for pain control especially in the pain phase. Capsular distension using normal saline injection under fluoroscopic guidance is safe, but results are not as good as the manipulation therapy. Recently, suprascapular nerve block using anesthetic agent (bupivacaine) is introduced, but its results have not been compared with other treatment methods. Most important management of FS is its prevention by maintaining functional states by active participation in clinic or home self exercise program and avoiding high risk factors.

Historical Sites in Yongon Campus of Seoul National University

June-Key Chung, M.D. (1977)
Professor, Department of Nuclear Medicine
Past Directer, Institute of Medical History and Culture, SNUH, Seoul, Korea

Yongon campus is located next to the Eastern Palaces (Changdeok & Changgyeong Palaces) and has been their property. Before its use by the royal family, this area was the birth place and home of the Minister Lee, Seok-hyung in the 15th century. He is known as the inventor of Korean version of Hippocrates Oath. He made a pond in his garden, and covered the water surface fully with Lotus flowers. In fact, "Yon" of "Yongon-dong" was derived from lotus flower.

After the King Seong-jong period, all housing structures were removed: Beautiful flowers were grown (Hamchun-won or Spring Garden), and riding horses were kept in the garden (Madeung-san or Riding Hill). The King Jung-jong established Gyeongmo Palace, a Shrine of his father, Prince Sado. The King Go-jong merged this shrine to Jong-myo and donated this area for public health. In 1908, the Daehan Hospital, the first modern hospital building, was open, and became the affiliate hospital of State Medical School, the first modern medical school. State Medical School was open in 1899 under the leadership of Ji, Seok-young. He became the founding dean, and it was the origin of Seoul National University College of Medicine.

Under the Japanese Colonial Rule, Daehan hospital was the affiliated hospital of Gyeongseong Medical School of the Gyeongseong Imperial University. After independence, two institutes merged to form Seoul National University College of Medicine. The Clock Tower which was elegantly decorated in the neo-baroque style was the front building of the Daehan hospital. Why did the Daehan hospital have a Clock Tower? Based on the traditional idea that the King is the time keeper, the clock symbolizes its prestige as the royal imperial hospital. In other words, it demonstrates the King Go-jong's will to modernize Korean medicine. Thereafter, the turret clock tower has not only been a symbol of Korean's aspiration for modernization, but also the symbol of the alma mater to SNU alumni.

Therapeutic Alliance in Clinical Practice

Damian Byungsuk Kim, M.D. (1959)
Associate Clinical Professor, St. George University
Director, OPD of Psychiatry at Coney Island Hospital, NY, NY

Modern medicine is focused too much on Biomedical Sciences and is losing sight of patients as a total human being. We should not merely treat the disease a patient has but treat a person who has a disease. Physicians should practice the Holistic approach.

There are many elements for the Holistic approach. One of the most important elements is "Doctor - Patient relationship". In this regards, building a good "Therapeutic Alliance" is crucial from the beginning of treatment. This terminology is originally coined by psychoanalysts.

There have been numerous research works on this issue throughout the history of medicine. All works agree that when you build a good therapeutic alliance, it facilitates the healing process, improves patient compliance, and decrease the chance of litigation against the doctor. It also is not limited to psychotherapy but applies to all physician-patient relationship regardless of the specialty. It is mostly a bilateral unconscious process, and therefore physicians may overlook this important factor in their practice.

The objectives of this presentation are;

1. Understanding the concepts, theories and the dynamics of therapeutic alliance.
2. Understanding the power of unconscious.
3. How to establish therapeutic alliance in clinical practice?

Inhaled Corticosteroid and Tuberculosis among Patients with Chronic Airway Disease

Jae-Joon Yim, M.D. (1988)
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Department of Internal Medicine,
Seoul National University College of Medicine, Seoul, Korea

Inhaled corticosteroid (ICS) use could decrease local immunity of the lung. Concerns have been raised regarding the risk of tuberculosis (TB) development among ICS users. The aim of this study was to elucidate the association between ICS use and the development of TB among patients with various respiratory diseases in Korea, an intermediate-TB burden country.

A nested case-control study based on the Korean national claims database was performed. The eligible cohort consisted of 853,439 new adult users of inhaled respiratory medications between January 1, 2007 and December 31, 2010. Patients diagnosed as having TB after initiation of the inhaled medication were included as cases. For each case individual, up to five control individuals matched for age, sex, diagnosis of asthma or chronic obstructive pulmonary disease (COPD) and initiation date of the inhaler use were selected.

From the cohort population, we matched 4,139 individuals diagnosed as having TB with 20,583 controls. ICS use was associated with the increased rate of TB diagnosis (adjusted OR (aOR), 1.20; 95% CI, 1.08 - 1.34). The association was dose dependent (p for trend <0.001). A subgroup analysis revealed that the ICS use increased the risk of TB development among non-users of oral corticosteroid (OCS) but not among OCS users.

In conclusion, ICS use increases the risk of TB in an intermediate-TB-burden country. Clinicians should be aware of the possibility of TB development among patients who are long-term, high-dose ICS users.

Funding Campaign for Building the World's Only Library: Renovating the Library of SNU College of Medicine

Jae-Joon Yim, M.D. Head of Vision 2017
Daehee Kang M.D., Dean
Seoul National University College of Medicine, Seoul, Korea

Since its founding in 1974, the library at SNU College of Medicine (SNUCM) has been the place where students exchanged ideas and actively sought new knowledge. In order to continue the tradition of training our medical students as the world's leader in medicine as well as in other fields, we plan to renovate the outdated library building at SNUCM. The new library will be a place where students can engage in interdisciplinary learning, cultivate creativity and widen their global perspectives.

We started 'Building the World's Only Library' funding campaign since June 2014. Our goal is to collect ten million dollars before March 2016. Thanks to the help of faculty members, alumni and many other donors, we have collected $3,200,000 so far. Your support is needed to build the new library of SNUCM. For more information on how to get involved or to make a donation, please visit our website at http://new-medlib.snu.ac.kr.

Memo

CME PROGRAMS / JUNE 6, 2015

7:00 - 9:00	Breakfast
7:45 - 7:50	Announcement Chang-Gyu Hahn, M.D. (1981), Scientific Committee Co-Chair

Moderator: Sunhee Lee, M.D. (1981), Publication Committee

7:50 - 8:15	SNUCM: Past, Present, and Future Daehee Kang, M.D. (1987)
8:15 - 8:30	11C-PBR28 PET Imaging in Multiple Sclerosis Patients and Healthy Controls: Test-retest reproducibility and focal visualization of active white matter areas Bunkyung Park, M.D. (2000)
8:30 - 8:45	MEK Inhibitors Selectively Suppress Alloreactivity and Graft-versus-Host Disease in a Memory Stage-dependent Manner Tae Kon Kim, M.D. (2001)
8:45 - 9:00	Emerging Therapies for Melanoma Sekwon Jang, MD (2001)
9:00 - 9:15	Epithelial Mesenchymal Transition in Micropapillary Colorectal Carcinoma Won Jae Huh, M.D. (2002)
9:15 - 9:30	Coffee break

Moderator: Mooyeon Oh-Park, M.D. (1989), Green Project Committee Chair

9:30 - 9:55	Legal Consequences of Post-Traumatic Stress Disorder Jiyoung Suk, Ph.D.
9:55 - 10:10	Non-receptor Tyrosine Kinase c-Src Activity and Cetuximab Response in Metastatic Colorectal Cancer Janghee Woo, M.D. (2004)
10:10 - 10:25	Cord Blood Levels of Adipocyte Fatty Acid Binding Protein (AFABP) are related to Birth Weight and Gestational Age in Newborn Infants Kyoung Eun Joung, M.D. M.M.Sc. (2002)
10:25 - 10:40	The Role of Exosomes in Cytotherapy for Acute Myelogenous Leukemia Taewoong Choi, M.D. (2002)
10:40 - 10:55	Conditional Survival after Surgical Resection of Gastric Cancer: A Multi-Institutional Analysis of 807 Patients Yuhree Kim, M.D., M.P.H. (2011)

Moderator: Young-Jae Nam, M.D. (1994), Green Project Committee

10:55 - 11:20	Why are Allergic Disorders More Prevalent in Developed Countries? C Lucy Park, M.D. (1975)
11:20 - 11:35	Transplanting Korean Development Model to Africa: South Korean NGOs' Family Planning Projects in Ethiopia Young Su Park, M.D. (2008), M.A. Anthropology (2012)
11:35 - 11:50	Serum Aminotransferase Activity and Comorbidities in US Veterans Tae Hoon Lee, M.D. (2002)
11:50 - 12:05	Reprogramming Specific Cardiac Cell Fates: New Paradigm for Heart Repair Young-Jae Nam, M.D. (1994)
12:05 - 12:15	Closing Remarks In Suk Seo, M.D. (1973), President, SNUCMAA of NA Yong Ho, Auh, M.D. (1972), Convention Co-Chair Yoogoo Kang, M.D. (1971), Scientific Committee Chair

SNUCM: Past, Present, and Future

Daehee Kang, M.D. (1987)
Professor and Dean, Seoul National University College of Medicine, Seoul, Korea

The Seoul National University College of Medicine (SNUCM) has been the nation's best institution for medical education, research, and clinical performance since its establishment in 1946. The original form of the SNUCM began in 1899 as ' Eui-Hak Gyo'. The talented students who came to the SNUCM passionately absorbed the knowledge and experience with full commitment as a doctor and researcher who deals with the quality of human lives. The graduates who have gone through the scholastically-dedicated teaching and training are proving as the leaders of the society in such diverse fields as medical education, research, clinical care, and health administration. The teaching staffs and research teams of our school are not only playing the leading roles for the medical advancement but also showing outstanding capabilities in global academic activities.

They are also dutifully serving the community through working at the Seoul National University Hospital (SNUH), the central medical institute of Korea, Bundang Hospital, and Boramae Hospital. The SNUH was recently selected as a chief operator of Sheik Khalifa Speciality Hospital in Arab Emirates. On such firm, comprehensive academic basis encompassing education, research, clinical care, and community service, the SNUCM is aiming at becoming the globally renowned medical center for advanced research and education for human life in the 21st century. The SNUCM is very much interested in community outreach program as well as healthcare ODA throughout the developing countries including Laos, Vietnam, and Myanmar, to name a few. JW Lee center for Global Medicine and Center for Health of Korean Reunification were established recently.

SNUCM has been ranked 56th in 2014 QS World University Rankings Subject of Medicine, and we are now working towards becoming one of the top ten medical schools in the world. We have total 53 international partner institutions including Johns Hopkins University, UCLA, University of Pennsylvania, University of Chicago, NYU, University of Melbourne, Shanghai Jiao Tong University and Kyoto University, etc. We send approximately 40 students every year for the short term clerkship at the international partner institutions and internship at international organizations as a global leading education program. Government and private research grant is 2,010 million Won and the number of publications in SCI-listed journals is 2,475 in 2014.

We're currently in the process of reforming educational curriculum, and our goal is to educate competent medical leaders of tomorrow who can contribute to the betterment of humanity and society on the principle of respect of the human being. The educational objective of the SNUCM is to produce graduates who possess the following four competencies; 1) Competency as a doctor who can ameliorate human health and alleviate suffering caused by disease, 2) Competency as a medical scientist who can conduct creative research, 3) Leadership and international perspective to lead future, and 4) Ethics and service mindset as a professional.

11C-PBR28 PET Imaging in Multiple Sclerosis Patients and Healthy Controls: Test-retest reproducibility and focal visualization of active white matter areas

Eunkyung Park, M.D. (2000)[1] , Jean-Dominique Gallezot[1], Aracely Delgadillo[2], Shuang Liu[2], Beata Planeta[1], Shu-Fei Lin[1], Kevin C. O'Connor[2], Keunpoong Lim[1], Jae-Yun Lee[2], Anne Chastre[2], Ming-Kai Chen[1], Nicholas Seneca[3], David Leppert[3], Yiyun Huang[1], Richard E. Carson[1], Daniel Pelletier[12]
Associate Research Scientist
[1]PET Center, Department of Diagnostic Radiology, Yale School of Medicine, New Haven, CT
[2]Department of Neurology, Yale School of Medicine, New Haven, CT
[3]Pharmaceuticals Division, Hoffmann-La Roche Ltd, Basel, Switzerland

Activated microglia plays a key role in inflammatory demyelinating injury in multiple sclerosis (MS). Microglial activation can be measured in vivo using a PET ligand 11C-PBR28. We evaluated the test-retest variability (TRV) and lesion detectability of 11C-PBR28 binding in MS subjects and healthy controls (HC) with high resolution PET.

Methods: Four clinically and radiologically stable relapsing-remitting MS subjects (age: 41 ± 7 y, 2M/2F) and 4 HC (age: 42 ± 8 y, 2M/2F), matched for translocator protein genotype (2 high and 2 medium affinity binder according to DNA polymorphism (rs6971) in each group), were studied for TRV. Another MS subject (age 41 y, M) with clinical and radiological activity was studied for lesion detectability. Dynamic data were acquired over 120 min after injection of 634 ± 101 MBq 11C-PBR28. For the TRV study, subjects were scanned twice, on average 1.4 weeks apart. Volume of distribution (VT) derived from multilinear analysis (MA1) modeling (t* = 30 min, using arterial input data) was the main outcome measure.

Results: Mean test VT values (mL?cm-3) were 3.9 ± 1.4 in the whole brain gray matter (GM), 3.6 ± 1.2 in the whole brain white matter (WM) or normal-appearing white matter (NAWM), and 3.3 ± 0.6 in MS WM lesions. Mean retest VT values were 3.7 ± 1.0 in GM, 3.3 ± 0.9 in WM/NAWM, and 3.3 ± 0.7 in MS lesions. Test-retest results showed a mean absolute TRV of ranging from 7-9% across GM, WM/NAWM, and MS lesions. High affinity binders demonstrated 30% higher VT than medium affinity binders in GM. Focal 11C-PBR28 uptake was detected in two enhancing lesions of the active MS patient.

Conclusions: High resolution 11C-PBR28 PET can visualize focal areas where microglial activation is known to be present and has good test-retest reproducibility in the human brain. 11C- PBR28 PET is likely to be valuable for monitoring both MS disease evolution and response to therapeutic strategies that target microglial activation.

Eunkyung Park (00) Nuclear Medicine
Yale University
PET Center, Department of Diagnostic Radiology
Advanced Imaging in Multiple Sclerosis Laboratory, Department of Neurology

Dr. Angela Eunkyung Park completed her nuclear medicine residency training at Seoul National University Hospital and obtained Ph.D. under the supervision of Drs. Myung Chul Lee (73) and Sang Eun Kim (83) at her alma mater in 2007. After obtaining nuclear medicine board certification, she worked as a faculty member at Korea University. She then moved to Buffalo, NY in 2010, following her husband, a Ph.D. student in philosophy at University at Buffalo (UB). Dr. Park studied neuromolecular imaging at UB for two years before joining Dr. Richard E. Carson's biomedical engineering lab at Yale. Her major research interest is in imaging neuroinflammation and neuroreceptors using positron emission tomography. She lives in New Haven, CT with her husband and a baby girl.

MEK Inhibitors Selectively Suppress Alloreactivity and Graft-versus-Host Disease in a Memory Stage-dependent Manner

Tae Kon Kim, M.D. (2001)
Clinical fellow, medical oncology/hematology
Department of Internal Medicine, Yale University School of Medicine,
Smilow Cancer Hospital at Yale-New Haven Hospital, New Haven, CT

Immunosuppressive strategies currently used in hematopoietic stem cell transplantation reliably decrease graft-versus-host disease (GVHD) rates, but also impair pathogen-specific immunity. Experimental transplant studies indicate that GVHD-initiating alloreactive T cells reside primarily in naive and central memory T-cell compartments. In contrast, virus-specific T-cells comprise a more differentiated memory population. Previously, it was shown that the rat sarcoma/mitogen-activated protein kinase kinase/extracellular receptor kinase (RAS/MEK/ERK) pathway is preferentially activated in naive and central memory human T-cells.

We hypothesized that MEK inhibitors would preferentially inhibit alloreactive T-cells, while sparing more differentiated virus-specific T-cells. To test this, we examined MEK inhibitors including selumetinib for human T cells. We found that these agents preferentially inhibited cytokine production and alloreactivity mediated by naive and central memory human CD4(+) and CD8(+) T-cells while sparing more differentiated T-cells specific for the human herpesviruses, cytomegalovirus and Epstein-Barr virus.

Next, we examined possible therapeutic potential in vivo conditions. We found that short-term posttransplant administration of selumetinib in a major histocompatibility complex major- and minor-mismatched murine model significantly delayed the onset of GVHD-associated mortality without compromising myeloid engraftment, demonstrating the in vivo potential of MEK inhibitors in the setting of hematopoietic stem cell transplantation. These findings strongly suggest that targeting memory-dependent differences in T-cell signaling is a potent and selective approach to inhibition of alloreactivity.

Tae Kon Kim (01) Hematology/Oncology
Clinical fellow in medical oncology/hematology
Yale University, New Haven, CT

Dr. Tae Kon Kim graduated from SNUCM in 2001 and completed his internship (PGY-1) at SNUH, with the 'Intern of the Year' award. To pursue a physician scientist career, he joined the laboratory of Dr. Alan Gewirtz's at the University of Pennsylvania and studied leukemia biology. Subsequently, he moved to MD Anderson Cancer Center, completed graduated studies and obtained Ph.D. in immunology in 2010. Based on his Ph.D. work, he published three first author papers including a Plenary paper in the Blood, and 5 co-authored papers and presented data at many national and international meetings (ASH, ASBMT, AAI etc.). He then completed residency in medicine at University of Miami in 2013 and currently is a clinical fellow in medical oncology/hematology at Yale Cancer Center. Dr. Kim lives in New Haven, CT with his wife and two daughters.

June 6, 2015; 8:45 - 9:00

Emerging Therapies for Melanoma

Sekwon Jang, MD (2001)
Director, Melanoma and Cutaneous Oncology Therapeutics and Research
Inova Comprehensive Cancer and Research Institute, Fairfax, VA

An estimated 76,100 patients will be diagnosed with invasive melanoma in the United States in 2014, and 9,710 patients will die from the disease. In almost all cases, the cause of death is related to the development of widespread metastatic disease. Although death rates from most types of cancer have steadily decreased in the United States ? a 20% decrease during two decades from a peak of 215.1 deaths per 100,000 people per year in 1991 to 171.8 in 2010 ? death rates from melanoma have steadily increased during the same time (2.7 deaths per 100,000 people per year in 2010).

The news regarding melanoma is far from all bad. Increases in our understanding of the human immune system have led to the development of new immunotherapeutic drugs such as ipilimumab, which has been shown to improve survival in phase III trials in metastatic melanoma, and anti-programmed death 1 (anti-PD1) antibodies, pembrolizumab and nivolumab. Also discovery of activating mutations in the BRAF gene in the mitogen-activated protein kinase (MAPK) pathway, which occur in about half of cutaneous melanomas and can be targeted with small molecule inhibitors of the BRAF protein, the downstream MEK protein, or both, has transformed the care for patients with metastatic melanoma.

Sekwon Jang (01) Oncology
Director, Melanoma and Cutaneous Oncology Therapeutics and Research
Inova Comprehensive Cancer and Research Institute, Virginia

Dr. Sekwon Jang completed his internal medicine residency at Albert Einstein Medical Center in Philadelphia and obtained Hematology Oncology fellowship training at University of Minnesota. He was Assistant Professor of Medicine at Georgetown University prior to joining Inova in 2014. Dr. Jang is board-certified in internal medicine, hematology and medical oncology. He has a special interest in the management of melanoma, cutaneous lymphoma and other advanced skin cancers. He is a member of the American Society of Clinical Oncology (ASCO) and serves as a member of the Quality Care Committee. He received Merit Awards from ASCO for his research and is actively involved in clinical trials and health outcome research. Dr. Jang lives in Rockville, MD with his wife and three children.

June 6, 2015; 9:00 - 9:15

Epithelial Mesenchymal Transition in Micropapillary Colorectal Carcinoma

Won Jae Huh, M.D. (2002), Raul S. Gonzalez, Mary K. Washington, Chanjuan Shi.
Gastrointestinal/Liver Pathology fellow, Vanderbilt University Medical Center, Nashville, TN

Micropapillary variant of colorectal cancers (CRC) behaves more aggressively and is associated with a poorer prognosis compared with typical CRCs. Based on our observation, the interface between micropapillary carcinoma and adjacent stroma often did not show clear transition from tumor epithelial cells to mesenchymal stromal cells. This phenomenon reminded us of epithelial mesenchymal transition (EMT). EMT is characterized by loss of epithelial markers, acquisition of mesenchymal markers, and activation of signalling pathways such as transforming growth factor β (TGFβ) signaling. EMT in cancer cells has been shown to be associated with increased metastatic potential. In this study, we investigated whether micropapillary CRC is highly associated with EMT.

Methods: 29 CRCs with at least focal micropapillary component were included in the study. Immunohistochemical studies were performed for epithelial markers (AE1/AE3, E-cadherin, and integrin β4 (ITGB4)), mesenchymal markers (vimentin and smooth muscle actin (SMA)) and TGFβ signaling (SMAD4).

Results: Focal loss or decrease in cytokeratin AE1/AE3 expression, especially membranous expression, was observed in 18 of 29 (62%) tumors. In addition, focal loss of E-cadherin membranous labeling was seen in 21 of 27 (78%). The reduced AE1/3 and E-cadherin expressions were mainly present in the transitional area between tumor cells and stroma, single cancer cells or cancer cells in the small clusters. Focal expression of vimentin in the tumor cells was also identified in 13 of 29 tumors (45%). Twenty-two of 29 (76%) carcinomas displayed prominent myxoid tumor stroma associated with micropapillary component. All 22 cases (100%) with the prominent myxoid stroma showed single cancer cells and small clusters of 2-3 cancer cells, whereas only 1 or 7 cases (14%) without prominent myxoid stroma showed single cancer cells and small clusters of cancer cells. In addition, the myxoid stroma around the micropapillary component in the 27 of 29 cases (93%) showed dense and strong SMA staining, which can be expressed in the cells completed with EMT. Twenty-four of 29 tumors (83%) showed nuclear expression of SMAD4, indicating the activation of TGFβ signaling.

Conclusion: In this study, we showed that micropapillary CRCs are highly associated with features of EMT such as loss of epithelial markers, gain of mesenchymal markers, and TGFβ signaling activation. This suggests that EMT may be the one of the reasons why micropapillary CRCs have higher metastatic rate than typical CRCs.

Won Jae Huh (02) Gastrointestinal/Liver Pathology
GI pathology fellow
Department of Pathology, Microbiology and Immunology
Vanderbilt University Medical Center, TN

Dr. Won Jae Huh conducted his graduate studies in the laboratory of Dr. Jason Mills and obtained Ph.D. in developmental biology at Washington University in St. Louis. He then completed his residency in Anatomic Pathology at Montefiore Medical Center/Albert Einstein College of Medicine in NY in 2014. Currently, he is in the Gastrointestinal/Liver Pathology Fellowship at Vanderbilt University Medical Center. He will soon be joining Dr. Robert Coffey's lab to pursue post-doctoral research studies in esophageal stem cells.

June 6, 2015; 9:30-9:55

Legal Consequences of Post-Traumatic Stress Disorder

Jiyoung Suk Ph.D.
Professor, Harvard Law School, Boston, MA

Non-receptor Tyrosine Kinase c-Src Activity and Cetuximab Response in Metastatic Colorectal Cancer.

Janghee Woo, M.D. (2004)
Fellow, Hematology/Oncology,
Fred Hutchinson Cancer Research Center, University of Washington

Background: Cetuximab, a chimeric murine human IgG1 antibody, was the first Anti-EGFR monoclonal antibody (MAb) to demonstrate efficacy in metastatic colorectal cancer (mCRC). Recent studies showed that non-receptor tyrosine kinase, c-Src can play the role of a key node, activating multiple oncogenic signaling pathways. In order to understand underlying mechanisms for resistance to anti-EGFR therapy, this study investigated whether activated c-Src can prospectively predict the anti-EGFR therapeutic response by providing bypass mechanisms to activate downstream-oncogenic signaling pathways.

Methods: Metastatic colorectal patients who received cetuximab in the first line therapy or salvage therapy combined with chemotherapy, were included in the study. Src activation was assessed by immunohistochemistry, using a validated antibody against phosphorylated Src at Tyr418 (p-SrcY418), at diagnosis. c-Src activity correlated with clinico-pathological features and KRAS mutation status. We retrospectively evaluated c-Src activity and progression free survival (PFS) and overall survival (OS) by Kaplan?Meier analysis in total 68 patients with mCRCs.

Results: Phospho-Src antibody unambiguously stained tumor cells in 24 cases (35.3%). The higher level of c-Src activity (p-Srchigh) was not associated with KRAS mutation, while it was negatively associated with mucinous tumors. The overall survival months of patients who received cetuximab in any lines of therapy for mCRC was comparable between p-Srchigh tumors and p-Srclow/- tumors (median OS p-Srchigh 31.73m vs p-Srclow/- 31.63m, Log Rank p=0.810). However, the PFS months of patients with p-Srchigh tumors (median PFS 2.78m, 95% CI, 2.201-3.359) was significantly lower than that of patients with p-Srclow/- tumors (4.37m, 95% CI, 0.976-7.764, HR 2.033, 95% CI, 1.130-3.66, Cox-regression p=0.018). In the mCRC patients with KRAS wild-type tumor, the progression free survival of patients with p-Srchigh tumors (median PFS 3.00m) was significantly lower than that of patients with p-Srclow/- tumors (5.80 months, HR 2.342, 95% CI, 1.032-5.32, Cox-regression p=0.042), while KRAS mutation subgroup failed to demonstrate significant difference in the progression free survival (p-Srchigh: 2.47 m and p-Srclow/-: 2.51 m).

Conclusions: Patients with KRASWT;p-Srchigh tumors exhibited significantly less benefit of cetuximab treatment despite KRAS wild-type status. It indicates that the activation of c-Src may confer resistance to anti-EGFR therapy in patients with mCRC. c-Src activation in mCRCs may, therefore, have value as a predictive marker for cetuximab response and in stratifying patients before treatment.

Janghee Woo (04) Cancer Biology
Hematology/Oncology fellow
Fred Hutchinson Cancer Research Center/University of Washington

Dr. Janghee Woo is currently a Hematology/Oncology fellow at Fred Hutchinson Cancer Research Center/University of Washington. He obtained PhD at Harvard University in 2011 in biology after having obtained an MD degree at Seoul National University in 2004. Following his PhD studies, he returned to medicine completing residency in Internal Medicine at Albert Einstein Medical Center, PA in 2014.

His research was centered on mesenchyme-epithelial interactions in gastrointestinal development & tumorigenesis and mechanisms of resistance in anti-EGFR therapy. Working initially under Dr. Gary Gilliland's supervision and later under Dr. Ramesh Shivdasani's mentorship at Dana Farber Cancer Institute, Dr. Woo studied how different tissue environments contribute to the success of colorectal cancer cells in forming tumors and surviving on therapy. He extended his observation in developmental biology to metastatic colorectal cancer and treatment, and identified signaling pathways that confer resistance to anti-EGFR therapy.

He is a recipient of AACR-GlaxoSmithKline Clinical Cancer Research Scholar Award, AACR Young Investigator Award, Dana-Farber/Harvard Cancer Center Award, and Einstein Society Award. Dr. Woo is deeply committed to a scientific career focused on the biology of development and cancer.

Cord Blood Levels of Adipocyte Fatty Acid Binding Protein (AFABP) are Related to Birth Weight and Gestational Age in Newborn Infants.

Kyoung Eun Joung, M.D. M.M.Sc. (2002)[1], Helen Christou, M.D.[2]
Christos Mantzoros M.D., D.Sc[3]
Neonatologist, Goryeb Children's Hospital, Morristown, NJ
Research Fellow, Beth Israel Deaconess Medical Center, Boston, MA

1 Neonatology, Goryeb Children's Hospital & Morristown Med. Center, Morristown, NJ
2 Pediatric Newborn Medicine, Brigham and Women's Hospital, Boston, MA,
3 Division of Endocrinology and Metabolism, Beth Israel Deaconess Medical Center, Boston, MA.

Background & Objective: Extreme birth weight categories such as small for gestational age (SGA), and large for gestational age (LGA) are associated with obesity and metabolic syndrome in future life, although the underlying mechanisms are not fully elucidated. A novel modulator of metabolic function of adipocyte fatty acid binding protein (AFABP) is known to modulate insulin sensitivity and lipid metabolism in adults, but its role in fetal and postnatal growth has not been characterized. The objective of the study is to determine the correlation between birth weight categories and the levels of AFABP in umbilical cord blood of neonates.

Methods: We designed a cross-sectional study of 361 neonates (227 full-term and 114 preterm) born at Brigham and Women's Hospital, Boston, MA. Umbilical cord blood was collected and plasma separated for analysis. For comparison, venous samples from 26 healthy adults were also analyzed. AFABP levels were measured by ELISA.

Results: Levels of AFABP in cord blood were significantly higher among newborn infants (56.38±3,42ng/mL) compared to adults (17.34 ± 1.71ng/mL, $p<0.001$). Preterm infants had higher cord blood levels of AFABP (74.52 ± 91.64ng/mL) compared to full term infants (44.35 ± 33.12ng/mL, $p<0.001$). In full term infants, there was a trend for lower cord blood AFABP levels in SGA infants (31.3 ± 11.5ng/mL, $p=0.05$) compared to AGA (45.1 ± 35.6 ng/mL) and LGA infants (48.2 ± 25.6 ng/mL). There was a positive correlation between cord blood AFABP level and birth weight Z-score ($r=0.21$, $p=0.02$). In a multivariate logistic regression model controlling for gestational age, mode of delivery, infant sex, singleton vs. multiple gestation, there was a significant negative association between SGA and level of AFABP in umbilical cord blood ($p=0.036$).

Conclusion: Circulating AFABP is lower in neonates compared to adults, and lower in full term SGA infants compared to AGA and LGA infants. We speculate that AFABP may play a role in fetal growth and weight gain, and may be involved in the association between SGA and metabolic syndrome in later life.

Kyoung Eun Joung (02) Pediatrics
Attending neonatologist
Goryeb Children's Hospital/Morristown Medical Center, NJ

After completion of residency training in Pediatrics and one-year neonatology fellowship at the Seoul National University Children's Hospital, I further pursued training in the US and completed my US pediatric residency at the University of Connecticut/Connecticut Children's Medical Center. Subsequently, I obtained my fellowship training in Neonatal-Perinatal Medicine at Harvard (2011-2014), as well as?Scholars in Clinical Science Program, a two-year program in translational and clinical research methodology, with Master of Medical Science degree at Harvard Medical School in 2014. I have been conducting a translational research on the effects of early life including fetal and postnatal period on circulating levels of adipokines including leptin, adiponectin, osteopontin, and irisin in the laboratory of Harvard endocrinologist Dr. Christos Mantzoros at Beth Israel Deaconess Medical Center. I am currently an attending neonatologist at Goryeb Children's Hospital/Morristown Medical Center, a regional perinatal center with a 45-bed level III neonatal intensive care unit in Morristown, New Jersey.

June 6, 2015; 10:25 - 10:40

The Role of Exosomes in Cytotherapy for Acute Myelogenous Leukemia

Taewoong Choi, M.D. (2002), Theresa L. Whiteside, M.D.
Hematology/Oncology Fellow, Division of Hematology-Oncology,
Department of Medicine, University of Pittsburgh Medical Center, Pittsburgh, PA

Acute Myeloid Leukemia (AML) is the most common acute leukemia among adults. Although cytotoxic chemotherapy has been the mainstay of AML treatment, response rate after induction chemotherapy did not improve over the last three decades. Current standard treatment cannot cure AML necessitating consolidative allogeneic stem cell transplantation. Toxicities of cytotoxic chemotherapy and high transplantation-related mortality limit the utility of the current therapy. Numerous previous studies indicated that immune cells responsible for anti-tumor responses are functionally disabled in AML patients and tumor-derived exosomes are currently emerging as one of the key immune modulators in the tumor microenvironment. Immunotherapy that can be combined with cytotoxic chemotherapy is an attractive strategy. Cytotherapy with NK92 cell line originally derived from Natural Killer (NK) lymphoma patients is being tested in early phase clinical trials as in vitro cytotoxicity against leukemia targets is robust. Here, we examine the role of exosomes in the setting of cytotherapy for AML and potential molecular mechanism interfering anti-tumor response in AML patients.

Taewoong Choi (02) Hematology-Oncology
Hematology Oncology Fellow (PGY6)
University of Pittsburgh Medical Center

Dr. Taewoong Choi conducted his postdoctoral studies in the development of NK (Natural Killer) cells in Dr. Wayne Yokoyama's lab at the Washington University in St. Louis, Missouri for 4 years. Then he completed internal medicine residency at St. Luke's Hospital located at the suburbs of St. Louis, Missouri. Currently he is a third year Hematology/Oncology fellow at the University of Pittsburgh Medical Center in Pittsburgh, Pennsylvania and investigates the role of exosomes in acute myelogenous leukemia as his laboratory research project under the tutelage of Dr. Theresa Whiteside. Upon completion of his Hem/Onc fellowship in June 2015, he will be obtaining additional years of BMT fellowship training at Stanford University in Palo Alto, California. Dr. Choi plans to pursue his career as a hematologic malignancy expert. Dr. Choi currently lives in Pittsburgh with his wife and a son.

June 6,2015;10:40 - 10:55

Conditional Survival after Surgical Resection of Gastric Cancer: A Multi-Institutional Analysis of 807 Patients

Yuhree Kim, M.D., M.P.H. (2011)
Postdoctoral Research Fellow
Department of Surgical Oncology, Johns Hopkins Hospital, Baltimore, MD

Survival estimates following surgical resection of gastric adenocarcinoma are traditionally reported as survival from the date of surgery. Conditional survival (CS) estimates, however, may be more clinically relevant by accounting for time already survived. We therefore sought to assess conditional survival (CS) following surgical resection for gastric adenocarcinoma.

Methods: We analyzed 807 patients who underwent curative intent resection for a gastric adenocarcinoma between 2000 and 2013 at 7 participating institutions in the US gastric cancer collaborative. Cox proportional hazards models were used to evaluate factors associated with overall survival. Three-year CS estimates at "x" year after surgery were calculated as follows: $CS3 = S(x+3)/S(x)$.

Results: Overall 1-, 3-, and 5-year survival rates after gastric resection were 42%, 34%, and 30%, respectively. Using CS estimates, the probability of surviving an additional 3 years given that the patient had survived at 1, 3, and 5 years, were 56%, 71% and 82%, respectively. Patients with higher risk at baseline (ie. stage III or IV disease, lymphovascular invasion) demonstrated the greatest increase in CS over time.

Conclusions: Survival estimates following surgical resection of gastric adenocarcinoma is dynamic - the probability of survival increases with time already survived. Patients with worse prognostic features at the time of surgery had the greatest increases in CS over time. Thus, conditional survival estimates provide important information on changing probability of survival over time and should be used in patients with resected gastric adenocarcinoma.

Yuhree Kim (11') MPH
Johns Hopkins University

Dr. Yuhree Kim attained her degree in Master of Public Health at Johns Hopkins Bloomberg School of Public Health in 2014. She is currently a postdoctoral research fellow in the Department of Surgery, Johns Hopkins University. Her research interest is in epidemiology of gastrointestinal cancer. She will present "Conditional survival after surgical resection of gastric cancer: A Multi-Institutional analysis".

Why is Allergic Disorders More Prevalent in Developed Countries?

C Lucy Park, M.D. (1975)
Professor, Pediatrics, Allergy & Immunology
University of Illinois, Chicago, IL

The prevalence of allergic diseases and asthma are increasing rapidly to almost an epidemic proportions worldwide, and up to 30-40% of the world's population are now affected by some form of allergy. The World Health Organization (WHO) estimates 300 million individuals have asthma worldwide, a figure that could increase to 400 million by 2025, if this trend continues. The complexity and severity of allergic disorders, including asthma, continue to increase, especially in children and young adults. This is paralleled with a rising prevalence of life threatening allergies like food allergies and drug allergies.

New research and expert consensus recommendations will be presented that will impact on the future management of these globally prevalent conditions, including the early origins of disease as well as associations with climate change, biodiversity, the role of the microbiome.

June 6, 2015; 11:20 - 11:35

Transplanting Korean Development Model to Africa: South Korean NGOs' Family Planning Projects in Ethiopia

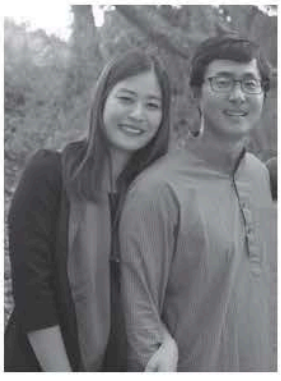
Young Su Park, M.D. (2008), M.A. (2012, Anthropology)
Doctoral Candidate, Department of Anthropology, Stanford University, CA

During the Korean War, six thousand Ethiopian soldiers were dispatched into the South Korean front for the sake of collective security. South Korea became the first former aid recipient country that joined the rank of a donor country, becoming a member of the Development Assistance Committee of the OECD in 2010. In 2012, Ethiopia became the biggest recipient of international aid in Africa from the Korean International Cooperation Agency. "Repayment for the gratitude" is the Korean government's official rhetoric of framing foreign aid and developmental projects in Ethiopia.

With the slogan of the "Korean Development Model", Korean Non-governmental organization (NGO) workers are exporting family planning and development projects to Ethiopia, which are reminiscent of New Village Movement: rural development mobilization under the developmental dictatorship in the 1970s in Korea. The ruling party of Ethiopia is also a proponent of the developmental state model, increasingly emphasizing the role of the strong state and political legitimacy based on the GDP growth in opposition to Western donors' neoliberal and democratic conditionality. Ethiopia is a multiethnic state where the majority of ethnicities have been historically marginalized under the rule of the Orthodox Christian Amhara regimes (Levine 2000). Korean aid workers are administering seemingly apolitical decontextualized development project (Ferguson 1990), which may have political implications within this context of ethnic politics in Ethiopia.

With these contexts in mind, this project seeks to examine three layers of inquiry: the interaction of Korean aid workers with Ethiopian bureaucrats, staffs, and residents in the local social world, the subjugation of marginalized groups of people in domestic politics of ethnicity, religion, and gender in Ethiopia, and the idiosyncratic encounters of development through emerging donors like Korea under the global order. I will approach this puzzle through the lens of the "developmentalist governmentality" (Sonn and Gimm 2013) of Korean NGO workers and its specific mode of temporalities and care, which will shed light on potential and limitations of prospective Korean global health projects.

Young su Park (08) Anthropology
Stanford University, Doctoral Candidate
Department of Anthropology, Culture and Society Track



Dr. Young Su Park has developed his interests in global health, migrant health, and healthcare for the socially marginalized elderly through the Christian Medical Fellowship and the Beautiful Life, a local healthcare NGO in Gangbuk-gu, Seoul. After his internship at the WHO as an elective, he founded the Global Health Forum with SNUCM students in 2007. During his military service as a public health doctor, he studied and helped revise the healthcare system for undocumented migrants and marginalized groups of people in South Korea. These early encounters with socially underrepresented patients with limited healthcare access were conducive to pursuing further study on sociocultural and medical anthropology. As an anthropology graduate student at the SNU, he wrote a master's thesis on the "Cultural conflicts over the illness experiences of Korean Chinese migrant workers." For his doctoral dissertation research, he is in preparation for an ethnographic field study on Korean NGO's maternal health project in Ethiopia. At Stanford, CA, he lives with his wife Yong Ra Jung, a violinist and music therapist.

June 6, 2015; 11:35 - 11:50

Serum Aminotransferase Activity and Comorbidities in US Veterans

Tae Hoon Lee, M.D. (2002)
Fellow (PGY4), Div. of Gastroenterology and Hepatology
MetroHealth Medical Center, Case Western Reserve University, Cleveland, OH

Elevated serum aminotransferases (aspartate aminotransferase [AST] and alanine aminotransferase [ALT]) are known to be associated with increased mortality. Comorbidities may be the key confounding factors to explain this association. In this study, our goal was to identify comorbidities that are associated with elevated serum aminotransferases.

Methods: All patients who had any aminotransferase level obtained at the Huntington VA Medical Center from January 2007 to December 2008 were identified. Demographic information and comorbidities were extracted electronically. Univariate and multivariate analyses were performed to identify comorbidities which significantly correlated with aminotransferase levels.

Results: 7.1% out of 26,538 patients had elevated AST levels, and 4.0% had elevated ALT levels. No significant association was noted between body mass index and aminotransferase levels. About 60% of patients with abnormal aminotransferase level did not show any form of comorbidity, while only 1.5% carried a confirmed diagnosis of nonalcoholic fatty liver disease. Compared to the normal aminotransferase group, mental diseases, ill-defined symptoms, and hepatobiliary diseases were more frequently observed in patients with abnormal aminotransferase levels. After adjusting for age, alcohol dependence (OR: 1.07 for AST, 1.02 for ALT), drug dependence (OR: 1.03 for AST, 1.02 for ALT), and hepatobiliary diseases (OR: 1.17 for AST and 1.15 for ALT) were significantly associated with elevated aminotransferase levels.

Conclusion: Among US veterans, elevated aminotransferase levels were associated with hepatobiliary diseases, alcohol dependence, and drug dependence. These comorbidities were closely correlated with each other.

Tae Hoon Lee (02) Gastroenterology
Division of Gastroenterology and Hepatology
MetroHealth Medical Center, Case Western Reserve University, Cleveland, OH

After the completion of one year internship at Seoul National University Hospital and military service as an army doctor, Dr. Tae Hoon Lee came to the US and sought research training in gastroenterology under the supervision of Dr. W. Raymond Kim at Mayo Clinic, Rochester, MN. Subsequently, he obtained internal medicine residency at Marshall University, WV and worked as a primary care physician at the Hunting VA Medical Center, WV, during which time he held an academic appointment of Associate Professor at Marshall University. Since July 2014, he started his gastroenterology fellowship at MetroHealth Medical Center, Case Western Reserve University, Cleveland, OH and has a busy life as a first year clinical fellow and also as a dad for three kids (including a new born baby this year).

June 6, 2015; 11:50 - 12:05

Reprogramming Specific Cardiac Cell Fates: New Paradigm for Heart Repair

Young-Jae Nam, M.D. (1994)
Assistant Professor, Department of Medicine and Cell and Developmental Biology,
Vanderbilt Center for Stem Cell Biology, Vanderbilt University School of Medicine, Nashville, TN

Heart disease leading to myocardial infarction, heart failure and arrhythmia is the number one cause of morbidity and mortality worldwide. Despite remarkable advances in cardiovascular medicine, the fundamental but unsolved problem is the myocardium's inability to repair itself by regeneration of cardiomyocytes. Once the heart loses cardiomyocytes upon injury or aging, this loss is irreversible and replaced by fibrotic scar. This leads to loss of pump function and precipitates life-threatening arrhythmias that lead to death in heart failure. Thus, the ability to make new cardiomyocytes has been an imperative scientific focus. Toward this goal, exciting progress has been made in recent years toward stem cell-based cell therapy and transplantation of embryonic stem cell-derived cardiomyocytes.

As an alternative approach, we and others showed that forced expression of core cardiac transcription factors in non-myocytes after heart injury induces cardiomyocyte-like cells in vivo. Although all these innovative approaches hold great potential, realistic application of these strategies to treat the diversity of cardiovascular disease must overcome the issue of multiple cardiomyocyte subtypes (i.e. atrial, ventricular, and nodal) that play mutually exclusive roles in cardiovascular physiology to coordinate cardiac contraction and effective blood circulation. Inability to direct subtype specification of newly generated cardiomyocytes has been a major barrier to clinical application.

Based on the mechanistic insights we have learned from our preliminary studies, we propose to develop an entirely new heart repair strategy which can specifically target an affected cardiac cell type. These experimental approaches will provide important new insights into the mechanisms of cardiac cell fate specifications and a unique opportunity to develop entirely new treatment paradigms for a wide spectrum of cardiovascular diseases. The scientific and clinical impact of our discoveries will extend beyond cardiovascular biology and medicine. The knowledge we obtain from this project, in principle, can be applied to repair other tissues by the conversion of the most abundant cell type to a clinically useful cell type and to even more specific subset if therapeutically necessary.

***Young-Jae Nam (94) Cardiology**
Vanderbilt University
Department of Medicine, Division of Cardiovascular Medicine
Department of Cell and Developmental Biology
Vanderbilt Center for Stem Cell Biology
*co-chair of Green Project scientific symposium

Dr. Nam completed his Ph.D. training at Albert Einstein College of Medicine, NY, under the supervision of Dr. Rick Kitsis. Following Internal Medicine Residency training, he entered a Physician-Scientist Training pathway in Cardiovascular Medicine at UT Southwestern Medical Center. After clinical cardiology fellowship, he joined Dr. Eric Olson's lab where he dedicated himself to pioneering a new research area, "cardiac reprogramming". After finishing his cardiology fellowship, he stayed a couple of more years at Dallas as a faculty member until he moved to the Music City. At Vanderbilt, he currently runs his research laboratory focusing on regenerating new heart muscle cells, and serves as an attending cardiologist on inpatient cardiology services.

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이용환(69) 이충호(69) 방준재(70) 김유식(71) 김창구(71) 서정자(71) 오동환(71)
오상현(71) 이성길(71) 이원택(71) 이창우(71) 조세진(71) 정진우(72) 나두섭(73)
민인기(73) 박진섭(73) 방병기(73) 이계석(73) 오인환(73) 김천일(73) 권철수(74)
김원정(75) 박인영(75) 김대중(76) 김승관(76) 김정아(76) 한승신(76) 김동수(78)
전영식(78)

Memo

대한민국에서도 세계적인 제약사가 나와야 하지 않을까요?

동아ST가 기술 수출한 시벡스트로(SIVEXTRO) 미국 신약 허가 승인

이 작은 나라에는
세계가 열광하는 음악이 있고
세계의 기준이 된 기술이 있고
세계가 사랑하는 음식이 있습니다

하지만, 세계적인 제약회사는 아직 없기에
동아제약이 새롭게 도전합니다

세계가 기다리던 슈퍼항생제 개발을 시작으로
글로벌 기술력을 더 전문적으로 키우기 위해

전문의약품 부문 동아ST와
일반의약품 부문 동아제약을 분리,
동아쏘시오의 이름아래 새로운 미래로 나아갑니다

국민 여러분의 80년 성원을 바탕으로
글로벌 제약사를 향하여!

이제 우리의 시장은 세계입니다

※시벡스트로(SIVEXTRO)의 미국 판매회사는 Cubist 입니다.

전문화된 글로벌 경영 체제 전환

동아쏘시오그룹