Sat. Jul 10, 2021

Track5

JCK Session

Session 01（ II-JCK01）

Surgery

Chair:Kisaburo Sakamoto （Mt. Fuji Shizuoka Children's Hospital, Japan）
Chair:Xu-ming Mo（Department of Cardiothoracic Surgery, Chidren's Hospital of Nanjing Medical University, China）
Chair:Tae-Gook Jun（Thoracic and Cardiovascular Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Republic of Korea）
9:00 AM - 10:30 AM Track5 (Web開催会場)

[II-JCK01-1] Pulmonary Valre replacement : Indication, techniques, and clinical outcome
○Yasuhiro Kotani （Department of Cardiovascular Surgery, Okayama University, Japan）

[II-JCK01-2] Double switch operation or Fontan operation in correited transposition of the great arteries : which operation should we perform?
○Kasahara Shingo （Department of Cardiovascular Surgery, Okayama University, Japan）

[II-JCK01-3] Left ventricular outflow tract obstruction: how to predict and how to manage?
○Chun Soo Park （Division of Pediatric Cardiac Surgery, Asan Medical Center, Seoul, Korea）

[II-JCK01-4] Trends in congenital heart disease mortality in Japan, China, and Korea, 1990-2019 : an analysis using data from the global burden of disease study 2019
○Hao Zhang[1], Hao Zhang[2] （1.Shanghai Children's Medical Center, Shanghai Jiaotong University School of Medicine; Shanghai Institute of Pediatric Congenital Heart Diseases, National Children's Medical Center, China, 2.Heart center and Shanghai Institute of Pediatric Congenital Heart Disease, Shanghai Children's Medical Center, National Children's Medical Center, Shanghai Jiaotong University School of Medicine, Shanghai 200127, China）

[II-JCK01-5] Half-turned truncal switch operation for the transposition of the great arteries with left ventricular outflow tract obstruction
○Hisayuki Hongu （Department of Pediatric Cardiovascular Surgery, Children's Medical Center, Kyoto Prefectural University of Medicine, Japan）

[II-JCK01-6] Surgical Treatment of Neonates and Young Infants with Symptomatic Tetralogy of Fallot
○Bobae Jeon （Thoracic and Cardiovascular Surgery, GangNeung Asan Hospital, Republic of Korea）

JCK Session

Session 02（ II-JCK02）

Kawasaki Disease/General Cardiology

Chair:Hiroyuki Yamagishi（Department of Pediatrics, Keio University School of Medicine, Japan）
Chair:Fang Liu（Cardiac Center, Children's Hospital of Fudan University, China）
Jong-Woon Choi（Department of Pediatrics, Bundang Jesaeng Hospital, Daejin Medical Center, Korea）
10:40 AM - 12:10 PM Track5 (Web開催会場)

[II-JCK02-1] Kawasaki disease : up-to-date
○Hiromichi Hamada （Department of Pediatrics, Graduate School of Medicine, Chiba University, Japan）

[II-JCK02-2] Epidemiologic trends of Kawasaki disease in South Korea from a nationwide survey
○Min-Seob Song （Department of Pediatrics, College of Medicine, Inje University, Haeundae Paik Hospital, Korea）

[II-JCK02-3] The experience of management of Kawasaki disease in China
○Zhong-dong Du （Pediatric Cardiology National Children's Medical Center, Beijing Children's Hospital, Capital Medical University, China）

[II-JCK02-4] COVID-19 and Kawasaki disease : A survey in Chinese pediatric population
○Guoying Huang[1], Fang Liu[1], Liping Xie[1], Yin Wang[2], Weili Yan[2], On Behalf of The Study Team of China Kawasaki Disease Research Collaborative Group （1.Heart Center, Children's Hospital of Fudan University, National Children's Medical Center, China, 2.Department of Epidemiology, Children's Hospital of Fudan University, National

Children's Medical Center, Shanghai, China）

[II-JCK02-5] Genetics in pediatric cardiomyopathy

○Keiichi Hirono （Department of Pediatrics, Toyama University Hospital, Japan）

[II-JCK02-6] Clinical characteristics and follow-up study of rare mitochondrial cardiomyopathy in Chinese children

○Shiwei Yang （Department of Cardiology, Children's Hospital of Nanjing Medical University, China）

[II-JCK02-7] TBD

○Kee-Soo Ha （TBA）

JCK Session

JCK Seminar 01（ II-JCKS01）

Chair:Susumu Minamisawa（The Jikei University School of Medicine, Japan）
12:30 PM - 1:20 PM Track5 (Web開催会場)

[II-JCKS01-1] Origin, differentiation, and closure of the ductus arteriosus

○Utako Yokoyama （Department of Physiology, Tokyo Medical University, Japan）

[II-JCKS01-2] Genetics in IPAH/HPAH

○Ayako Chida-Nagai （Department of Pediatrics, Hokkaido University, Japan）

JCK Session

JCK Seminar 02（ II-JCKS02）

Chair:Min Huang（Pediatrics, Shanghai Jiao Tong University, China）
1:30 PM - 2:10 PM Track5 (Web開催会場)

[II-JCKS02] Tips of Intervention of PA/IVS with hypoplastic right heart in neonate and fetus

○Silin Pan[1], Gang Luo[1], Kuiliang Wang[1], Yue Sun[2], Taotao Chen[3] （1.Heart Center, Qingdao Women and Children's Hospital, Qingdao University, China, 2.Fetal Medicine Unit, Qingdao Women and Children's Hospital, Qingdao University, 3.Department of Obstetric Ultrasound, Qingdao Women and Children's Hospital, Qingdao University）

JCK Session

JCK Seminar 03（ II-JCKS03）

Chair:Tae-Gook Jun（Thoracic and Cardiovascular Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea）
2:15 PM - 2:55 PM Track5 (Web開催会場)

[II-JCKS03] Audacity to challenge pediatric heart diseases over 60 years

○Young-Hwan Park （Severance Cardiovascular Hospital, Yonsei University Health System, Korea）

JCK Session

Session 03（ II-JCK03）
Interventional Cardiology

Chair:Sung-Hae Kim（Shizuoka Children's Hospital, Japan）
Chair:Kun Sun（Department of Pediatric Cardiology, Xinhua Hospital Aliated to Shanghai Jiaotong University, China）
Chair:Jae Young Choi（Division of Pediatric Cardiology, Severance Cardiovascular Hospital, Yonsei University Health System, Korea）
3:00 PM - 4:30 PM Track5 (Web開催会場)

[II-JCK03-1] Trans-catheter pulmonary valve implantation

○Gi-Beom Kim （Department of Pediatrics, Seoul National University Children's Hospital, Seoul National University College of Medicine, Korea）

[II-JCK03-2] PDA closure in premature infants

○Chun-An Chen （Department of Cardiology, National Taiwan University Children's Hospital, Taiwan）

[II-JCK03-3] The initial experience of device closure of ventricular septal defect in Japan

○Takanari Fujii （Pediatric Heart Disease and Adult Congenital Heart Disease Center, Showa University Hospital, Japan）

[II-JCK03-4] Initial clinical experience of the biodegradable Absnow™ device for percutaneous closure of atrial septal defect in human

○Zhi-Wei Zhang （Guangdong Pravincial Cardiovascular Institute, China）

[II-JCK03-5] The advantage of hybrid stage 1 for hypoplastic left heart syndrome（ HLHS） - Effects on the growth of pulmonary artery -

○Shigeki Yoshiba （Saitama Medical University International Medical Center, Japan）

[II-JCK03-6] Efficacy of transcatheter pulmonary valve perforation by micro-guidewire and balloon dilation in neonates with pulmonary atresia with intact ventricular septum

○Yurong Wu, Chen Sun, Wu Yurong, Yang Jianping, Jiao Xianting, Jin Wenhao, Sun Kun （Pediatric Cardiology, Xinhua Hospital Aliated to Shanghai Jiaotong University School of Medicine, China）

[II-JCK03-7] A single center experience in percutaneous pulmonary valve implantation using melody valve and newly made self-expandable valved-stent

○Ah Young Kim （Pediatric Cardiology, Yonsei University College of Medicine, Korea）

JCK Session

Session 04（ II-JCK04）

Adult Congenital Heart Disease

Chair:Teiji Akagi（Okayama University, Japan）
Chair:Maoping Chu（Pediatric Cardiology, Second Clinical Medical School, China）
Chair:June Huh（Pediatrics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea）
4:40 PM - 6:40 PM Track5 (Web開催会場)

[II-JCK04-1] Adult congenital heart disease

○Kiyotaka Takefuta （International University of Health and Welfare, Japan）

[II-JCK04-2] Pathophysiology of Fontan circulation and treatment strategy to establish Super-Fontan

○Yiu-Fai Cheung （Department of Paediatrics and Adolescent Medicine, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong）

[II-JCK04-3] A non-invasive nanoparticles for multimodal imaging of ischemic myocardium

○Jie Tian （Heart Center, The Children's Hospital of Chongqing Medical University, China）

[II-JCK04-4] Metabolic syndrome and renal disease in ACHD patients

○Norihisa Toh （Department of Cardiology, Okayama University, Japan）

[II-JCK04-5] Surgical management in adults with congenital heart diseases

○Jae Gun Kwak （Department of Thoracic and Cardiovascular Surgery, Seoul National University Children's Hospital, Seoul National University, College of Medicine, Korea）

[II-JCK04-6] Pregnancy, What is the challenge in Adult Congenital Heart Disease with Heart Failure?

○Lucy Youngmin Eun （Associate Professor, Pediatric Cardiology, Yonsei University College of Medicine, Seoul, Korea）

[II-JCK04-7] Hemodynamics and surgery in adult congenital heart disease

○Keiichi Itatani （Osaka City University, Japan）

[II-JCK04-8] De ritis ratio in Kawasaki disease

○Yunjia Tang （Department of Cardiology, Children's Hospital of Soochow University, China）

[II-JCK04-9] Aortic root replacement in adult congenital heart disease

○In-Seok Jeong （Department of Thoracic and Cardiovascular Surgery, Chonnam National University Hospital and Medical School, Korea）

JCK Session

Session 01（ II-JCK01）

Surgery

Chair:Kisaburo Sakamoto （Mt. Fuji Shizuoka Children's Hospital, Japan）
Chair:Xu-ming Mo（Department of Cardiothoracic Surgery, Chidren's Hospital of Nanjing Medical University, China）
Chair:Tae-Gook Jun（Thoracic and Cardiovascular Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Republic of Korea）
Sat. Jul 10, 2021 9:00 AM - 10:30 AM Track5 (Web開催会場)

[II-JCK01-1] Pulmonary Valre replacement : Indication, techniques, and clinical outcome

○Yasuhiro Kotani （Department of Cardiovascular Surgery, Okayama University, Japan）

[II-JCK01-2] Double switch operation or Fontan operation in correited transposition of the great arteries : which operation should we perform?

○Kasahara Shingo （Department of Cardiovascular Surgery, Okayama University, Japan）

[II-JCK01-3] Left ventricular outflow tract obstruction: how to predict and how to manage?

○Chun Soo Park （Division of Pediatric Cardiac Surgery, Asan Medical Center, Seoul, Korea）

[II-JCK01-4] Trends in congenital heart disease mortality in Japan, China, and Korea, 1990-2019 : an analysis using data from the global burden of disease study 2019

○Hao Zhang[1], Hao Zhang[2] （1.Shanghai Children's Medical Center, Shanghai Jiaotong University School of Medicine; Shanghai Institute of Pediatric Congenital Heart Diseases, National Children's Medical Center, China, 2.Heart center and Shanghai Institute of Pediatric Congenital Heart Disease, Shanghai Children's Medical Center, National Children's Medical Center, Shanghai Jiaotong University School of Medicine, Shanghai 200127, China）

[II-JCK01-5] Half-turned truncal switch operation for the transposition of the great arteries with left ventricular outflow tract obstruction

○Hisayuki Hongu （Department of Pediatric Cardiovascular Surgery, Children's Medical Center, Kyoto Prefectural University of Medicine, Japan）

[II-JCK01-6] Surgical Treatment of Neonates and Young Infants with Symptomatic Tetralogy of Fallot

○Bobae Jeon （Thoracic and Cardiovascular Surgery, GangNeung Asan Hospital, Republic of Korea）

(Sat. Jul 10, 2021 9:00 AM - 10:30 AM Track5)

[II-JCK01-1] Pulmonary Valre replacement : Indication, techniques, and clinical outcome

○Yasuhiro Kotani （Department of Cardiovascular Surgery, Okayama University, Japan）

(Sat. Jul 10, 2021 9:00 AM - 10:30 AM Track5)

[II-JCK01-2] Double switch operation or Fontan operation in correited transposition of the great arteries : which operation should we perform?

○Kasahara Shingo （Department of Cardiovascular Surgery, Okayama University, Japan）

(Sat. Jul 10, 2021 9:00 AM - 10:30 AM Track5)

[II-JCK01-3] Left ventricular outflow tract obstruction: how to predict and how to manage?

○Chun Soo Park （Division of Pediatric Cardiac Surgery, Asan Medical Center, Seoul, Korea）

Left ventricular outflow obstruction is always a headache, if it occurs. Even though the development of LVOTO couldn’ t be completely predictable using traditional measures, algorithmic approach might be a key to success. Additional imaging such as computed tomographic scan is quite helpful to better predict the development of LVOTO. For recurrent LVOTO, LVOT bypass procedure could be a feasible and safe surgical option.

(Sat. Jul 10, 2021 9:00 AM - 10:30 AM Track5)

[II-JCK01-4] Trends in congenital heart disease mortality in Japan, China, and Korea, 1990-2019 : an analysis using data from the global burden of disease study 2019

○Hao Zhang[1], Hao Zhang[2] （1.Shanghai Children’s Medical Center, Shanghai Jiaotong University School of Medicine; Shanghai Institute of Pediatric Congenital Heart Diseases, National Children’s Medical Center, China, 2.Heart center and Shanghai Institute of Pediatric Congenital Heart Disease, Shanghai Children's Medical Center, National Children’s Medical Center, Shanghai Jiaotong University School of Medicine, Shanghai 200127, China）

Background A comparative analysis of congenital heart disease (CHD) mortality is lacking for Japan, China and Korea.
Methods CHD mortality estimates were obtained from the Global Burden of Disease study 2019. We utilized an age-period-cohort model to estimate overall annual percentage change in mortality, annual

percentage change from 0-4 to 65-69 years and period (cohort) relative risks.
Results In 2019, the age-standardized mortality rate of CHD (per 100,000 population) was 0.80 in Japan, 2.67 in China, and 0.62 in Korea, with the largest annual reduction observed in Korea (-3.95% per year) and followed by Japan (-2.71%) and China (-0.99%). Although the age distribution of deaths from CHD is gradually shifting from the pediatric (under 20 years) to the adult population (over 20 years) in all three countries, the majority of deaths (~70%) in China remained concentrated in children under 5 years of age. Mortality reductions were generally favorable in younger age groups except for those >50 years of age in China. Decreasing relative risks of mortality were observed in successively younger birth cohorts and over the study period for all three countries.
Conclusion In the past 30 years, there are noticeable progress in reducing CHD mortality in Japan, China and Korea, but China still faces significant challenge to catch up with the other two countries.

(Sat. Jul 10, 2021 9:00 AM - 10:30 AM Track5)

[II-JCK01-5] Half-turned truncal switch operation for the transposition of the great arteries with left ventricular outflow tract obstruction

○Hisayuki Hongu （Department of Pediatric Cardiovascular Surgery, Children's Medical Center, Kyoto Prefectural University of Medicine, Japan）

(Sat. Jul 10, 2021 9:00 AM - 10:30 AM Track5)

[II-JCK01-6] Surgical Treatment of Neonates and Young Infants with Symptomatic Tetralogy of Fallot

○Bobae Jeon （Thoracic and Cardiovascular Surgery, GangNeung Asan Hospital, Republic of Korea）

JCK Session

Session 02（ II-JCK02）

Kawasaki Disease/General Cardiology

Chair:Hiroyuki Yamagishi（Department of Pediatrics, Keio University School of Medicine, Japan）
Chair:Fang Liu（Cardiac Center, Children's Hospital of Fudan University, China）
Jong-Woon Choi（Department of Pediatrics, Bundang Jesaeng Hospital, Daejin Medical Center, Korea）
Sat. Jul 10, 2021 10:40 AM - 12:10 PM Track5 (Web開催会場)

[II-JCK02-1] Kawasaki disease : up-to-date

○Hiromichi Hamada （Department of Pediatrics, Graduate School of Medicine, Chiba University, Japan）

[II-JCK02-2] Epidemiologic trends of Kawasaki disease in South Korea from a nationwide survey

○Min-Seob Song （Department of Pediatrics, College of Medicine, Inje University, Haeundae Paik Hospital, Korea）

[II-JCK02-3] The experience of management of Kawasaki disease in China

○Zhong-dong Du （Pediatric Cardiology National Children's Medical Center, Beijing Children's Hospital, Capital Medical University, China）

[II-JCK02-4] COVID-19 and Kawasaki disease : A survey in Chinese pediatric population

○Guoying Huang[1], Fang Liu[1], Liping Xie[1], Yin Wang[2], Weili Yan[2], On Behalf of The Study Team of China Kawasaki Disease Research Collaborative Group （1.Heart Center, Children's Hospital of Fudan University, National Children's Medical Center, China, 2.Department of Epidemiology, Children's Hospital of Fudan University, National Children's Medical Center, Shanghai, China）

[II-JCK02-5] Genetics in pediatric cardiomyopathy

○Keiichi Hirono （Department of Pediatrics, Toyama University Hospital, Japan）

[II-JCK02-6] Clinical characteristics and follow-up study of rare mitochondrial cardiomyopathy in Chinese children

○Shiwei Yang （Department of Cardiology, Children's Hospital of Nanjing Medical University, China）

[II-JCK02-7] TBD

○Kee-Soo Ha （TBA）

(Sat. Jul 10, 2021 10:40 AM - 12:10 PM Track5)

[II-JCK02-1] Kawasaki disease : up-to-date

○Hiromichi Hamada （Department of Pediatrics, Graduate School of Medicine, Chiba University, Japan）

(Sat. Jul 10, 2021 10:40 AM - 12:10 PM Track5)

[II-JCK02-2] Epidemiologic trends of Kawasaki disease in South Korea from a nationwide survey

○Min-Seob Song （Department of Pediatrics, College of Medicine, Inje University, Haeundae Paik Hospital, Korea）

We assessed the epidemiologic trends of Kawasaki disease (KD) in South Korea from the nationwide survey. The average annual incidence of KD in South Korea has been increased but stationary recently. The incidence of acute respiratory virus infections and KD in Korea became significantly lower (about 70% of the overall mean weekly positivity rate for viruses and about 60% of the mean incidence of KD cases by Korea national database) since the emergence of the coronavirus disease 2019 (COVID-19) after nonpharmaceutical interventions such as mandatory mask wearing, school closure, social distancing etc. We think cautiously that triggering of respiratory pathogens (such as virus) may be very important etiology of KD. Male to female ratio (about 1.42:1) and incidence of incomplete KD (about 40%) was relatively stationary. 1st intravenous immunoglobulin (IVIG) non-response rate (12.7%) was also stationary but increased in recent years. Incidence of coronary artery aneurysm (CAA) during recent 3 years (CAA, about 1.7% and giant CAA, about 0.17%) is not decreasing. To decrease the incidence of CAA, treatment modality should be changed especially for possible IVIG resistant KD patients at higher risk.

(Sat. Jul 10, 2021 10:40 AM - 12:10 PM Track5)

[II-JCK02-3] The experience of management of Kawasaki disease in China

○Zhong-dong Du （Pediatric Cardiology National Children's Medical Center, Beijing Children's Hospital, Capital Medical University, China）

(Sat. Jul 10, 2021 10:40 AM - 12:10 PM Track5)

[II-JCK02-4] COVID-19 and Kawasaki disease : A survey in Chinese pediatric population

○Guoying Huang[1], Fang Liu[1], Liping Xie[1], Yin Wang[2], Weili Yan[2], On Behalf of The Study Team of China Kawasaki Disease Research Collaborative Group （1.Heart Center, Children's Hospital of Fudan University, National Children's Medical Center, China, 2.Department of Epidemiology, Children's Hospital of Fudan University, National Children's Medical Center, Shanghai, China）

Background: Increasing cases of children infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) presenting with severe Kawasaki-like disease have been reported in some Western countries, raising the possibility of SARS-CoV-2 being a trigger of Kawasaki disease (KD). We aimed to investigate whether KD is linked to coronavirus disease 2019 (COVID-19) in Chinese pediatric population.
Methods: Patients were enrolled if diagnosed with KD in the 40 hospitals of China Kawasaki Disease Research Collaborative Group from January to April 2020, the COVID-19 epidemic period in China. Information of demographic data, KD shock syndrome, macrophage activation syndrome, evidence of SARS-CoV-2 infection and the number of KD cases were retrospectively analyzed.
Results: The completed response was received from 29/40 hospitals (72.5%) across 19 provinces. Of 2108 KD patients enrolled, the median age was 1.9 years and 63.8% were male. KD shock syndrome and macrophage activation syndrome were diagnosed in eight (0.4%) and two (0.1%) patients, respectively, none of whom had contact history with COVID-19 patients. Greater number of KD cases from January to April 2020 than the upper limit of 95% CI of estimated numbers of cases of the past three years were observed in only two out of 29 (6.9%) hospitals. RT-PCR tests in 434 patients and antibody tests in 64 patients for SARS-CoV-2 were all negative, including nine with exposure history.
Conclusions: There is no evidence of the link of KD with COVID-19 in Chinese children in terms of its prevalence and severity.

(Sat. Jul 10, 2021 10:40 AM - 12:10 PM Track5)

[II-JCK02-5] Genetics in pediatric cardiomyopathy

○Keiichi Hirono （Department of Pediatrics, Toyama University Hospital, Japan）

(Sat. Jul 10, 2021 10:40 AM - 12:10 PM Track5)

[II-JCK02-6] Clinical characteristics and follow-up study of rare mitochondrial cardiomyopathy in Chinese children

○Shiwei Yang （Department of Cardiology, Children's Hospital of Nanjing Medical University, China）

(Sat. Jul 10, 2021 10:40 AM - 12:10 PM Track5)

[II-JCK02-7] TBD

○Kee-Soo Ha （TBA）

JCK Session

JCK Seminar 01（ II-JCKS01）

Chair:Susumu Minamisawa（The Jikei University School of Medicine, Japan）

Sat. Jul 10, 2021 12:30 PM - 1:20 PM Track5 (Web開催会場)

[II-JCKS01-1] Origin, differentiation, and closure of the ductus arteriosus

○Utako Yokoyama （Department of Physiology, Tokyo Medical University, Japan）

[II-JCKS01-2] Genetics in IPAH/HPAH

○Ayako Chida-Nagai （Department of Pediatrics, Hokkaido University, Japan）

(Sat. Jul 10, 2021 12:30 PM - 1:20 PM Track5)

[II-JCKS01-1] Origin, differentiation, and closure of the ductus arteriosus

○Utako Yokoyama （Department of Physiology, Tokyo Medical University, Japan）

(Sat. Jul 10, 2021 12:30 PM - 1:20 PM Track5)

[II-JCKS01-2] Genetics in IPAH/HPAH

○Ayako Chida-Nagai （Department of Pediatrics, Hokkaido University, Japan）

JCK Session

JCK Seminar 02（ II-JCKS02）

Chair:Min Huang（Pediatrics, Shanghai Jiao Tong University, China）

Sat. Jul 10, 2021 1:30 PM - 2:10 PM Track5 (Web開催会場)

[II-JCKS02] Tips of Intervention of PA/IVS with hypoplastic right heart in neonate and fetus

○Silin Pan[1], Gang Luo[1], Kuiliang Wang[1], Yue Sun[2], Taotao Chen[3]（1.Heart Center, Qingdao Women and Children's Hospital, Qingdao University, China, 2.Fetal Medicine Unit, Qingdao Women and Children's Hospital, Qingdao University, 3.Department of Obstetric Ultrasound, Qingdao Women and Children's Hospital, Qingdao University）

(Sat. Jul 10, 2021 1:30 PM - 2:10 PM Track5)

[II-JCKS02] Tips of Intervention of PA/IVS with hypoplastic right heart in neonate and fetus

○Silin Pan[1], Gang Luo[1], Kuiliang Wang[1], Yue Sun[2], Taotao Chen[3] (1.Heart Center, Qingdao Women and Children's Hospital, Qingdao University, China, 2.Fetal Medicine Unit, Qingdao Women and Children's Hospital, Qingdao University, 3.Department of Obstetric Ultrasound, Qingdao Women and Children's Hospital, Qingdao University)

Pulmonary atresia with intact ventricular septum (PA/IVS) is a complex cyanotic congenital heart disease (CHD), accounted for about 1.9% of CHD patients. PA/IVS can gradually evolved into hypoplastic right heart syndrome (HRHS), and lead to fetal edema, heart failure and even in-uterus demise, loss of biventricular circulation after birth. Fetal pulmonary valvuloplasty (FPV) was introduced clinically to treat PA/IVS about 20 years ago. However, there are still many confusing factors. Firstly, the interventional indication is still not confirmed. The G-score system is mainly used to evaluate whether fetuses can achieve biventricular outcome, but this scoring system is not completely suitable for Asia-pacific population. We urgently need a new indication to determine the clients for FPV. Therefore, our team has cooperated with the artificial intelligence (AI) team, hoping to explore a characteristic indication through the assistance of AI. Besides, FPV is difficult to operate, which is a huge challenge for the cardiologist, obstetrician, ultrasonographer and anesthesiologist. It requires the close cooperation of multidisciplinary team (MDT). Still, the understanding of FPV by medical personnel and fetal family members is insufficient currently, and a large number of science popularization and publicity are needed.

JCK Session

JCK Seminar 03（ II-JCKS03）

Chair:Tae-Gook Jun（Thoracic and Cardiovascular Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea）

Sat. Jul 10, 2021 2:15 PM - 2:55 PM Track5 (Web開催会場)

[II-JCKS03] Audacity to challenge pediatric heart diseases over 60 years

○Young-Hwan Park （Severance Cardiovascular Hospital, Yonsei University Health System, Korea）

(Sat. Jul 10, 2021 2:15 PM - 2:55 PM Track5)

[II-JCKS03] Audacity to challenge pediatric heart diseases over 60 years

○Young-Hwan Park （Severance Cardiovascular Hospital, Yonsei University Health System, Korea）

Early 1950' s, in the world many doctors made a huge effort to diagnose the cardiac disease by catheterization, and to treat by surgery. I just think about that time with you.
How many times they repeated their experiments prior to its clinical application
How they worked hard competitively but cooperatively
How they precisely reported their results, even unsuccessful ones.
In the book " the righteous mind" written by Jonathan Haidt, he describes human minds as follows 1) People are more interested in being seen than being truly goodpeople 2) People often deceive others when they are not noticed and there is room for escapism 3) We are not good at questioning our beliefs and finding reasons for them. 4) We finds other people' s errors like knife, on the contrary, they can pinpoint our errors 5) Work immersion and burn out are same.
In the past, doctors blamed each other in the Mortality and Morbidity Conference, and nobody wanted to have responsibility. But now, main treating doctor has primaryresponsibility. He should explain the possible cause of Morbidity and Mortality
I want to conclude my talk with Dr. Song Wan' s comment (HongKong)
" Through the continued perseverance, dedication, and hard work of many individualsworking together, the evolution of cardiovascular surgery is still ongoing with the expectation that this progress will accelerate with improvement in the country' s economy. However, we should never forget it was the bold ventures of those pioneers thatbrought us to where we are today.

JCK Session

Session 03（ II-JCK03）

Interventional Cardiology

Chair:Sung-Hae Kim（Shizuoka Children's Hospital, Japan）
Chair:Kun Sun（Department of Pediatric Cardiology, Xinhua Hospital Aliated to Shanghai Jiaotong University, China）
Chair:Jae Young Choi（Division of Pediatric Cardiology, Severance Cardiovascular Hospital, Yonsei University Health System, Korea）
Sat. Jul 10, 2021 3:00 PM - 4:30 PM Track5 (Web開催会場)

[II-JCK03-1] Trans-catheter pulmonary valve implantation

○Gi-Beom Kim （Department of Pediatrics, Seoul National University Children's Hospital, Seoul National University College of Medicine, Korea）

[II-JCK03-2] PDA closure in premature infants

○Chun-An Chen （Department of Cardiology, National Taiwan University Children's Hospital, Taiwan）

[II-JCK03-3] The initial experience of device closure of ventricular septal defect in Japan

○Takanari Fujii （Pediatric Heart Disease and Adult Congenital Heart Disease Center, Showa University Hospital, Japan）

[II-JCK03-4] Initial clinical experience of the biodegradable Absnow^{TM} device for percutaneous closure of atrial septal defect in human

○Zhi-Wei Zhang （Guangdong Pravincial Cardiovascular Institute, China）

[II-JCK03-5] The advantage of hybrid stage 1 for hypoplastic left heart syndrome（ HLHS） - Effects on the growth of pulmonary artery -

○Shigeki Yoshiba （Saitama Medical University International Medical Center, Japan）

[II-JCK03-6] Efficacy of transcatheter pulmonary valve perforation by micro-guidewire and balloon dilation in neonates with pulmonary atresia with intact ventricular septum

○Yurong Wu, Chen Sun, Wu Yurong, Yang Jianping, Jiao Xianting, Jin Wenhao, Sun Kun （Pediatric Cardiology, Xinhua Hospital Aliated to Shanghai Jiaotong University School of Medicine, China）

[II-JCK03-7] A single center experience in percutaneous pulmonary valve implantation using melody valve and newly made self-expandable valved-stent

○Ah Young Kim （Pediatric Cardiology, Yonsei University College of Medicine, Korea）

(Sat. Jul 10, 2021 3:00 PM - 4:30 PM Track5)

[II-JCK03-1] Trans-catheter pulmonary valve implantation

○Gi-Beom Kim （Department of Pediatrics, Seoul National University Children's Hospital, Seoul National University College of Medicine, Korea）

(Sat. Jul 10, 2021 3:00 PM - 4:30 PM Track5)

[II-JCK03-2] PDA closure in premature infants

○Chun-An Chen （Department of Cardiology, National Taiwan University Children's Hospital, Taiwan）

Transcatheter closure of PDA has been extended to preterm infants with hemodynamically significant PDA due to the advances in device design, the establishment of an exclusive transvenous procedure, and cumulative experiences. In the past decade, several intervention teams from many different countries have reported encouraging results using various devices. The cardiac catheterization intervention team of National Taiwan University Children' s Hospital started prematurity PDA closure program in 2016. Our initial experience was published last year (Int J Cardiol. 2020;312:50-55), and proposed several novel and clinically significant concepts related to this procedure. The observation that the implanted device might experience deformation at follow-up, probably related to ductus constriction, may have great impacts on both device selection and deployment technique. It is important to note that this is not a procedure with neglectable risks. To achieve the best result of this intervention, there must be a good match between patients, PDA morphology, and the devices chosen for closure. Before conducting a randomized control study comparing with the surgery and conservative treatment, measures to minimize any potential complications inherited to the procedure/device must be undertaken for every intervention team dedicated to this novel treatment option.

(Sat. Jul 10, 2021 3:00 PM - 4:30 PM Track5)

[II-JCK03-3] The initial experience of device closure of ventricular septal defect in Japan

○Takanari Fujii （Pediatric Heart Disease and Adult Congenital Heart Disease Center, Showa University Hospital, Japan）

(Sat. Jul 10, 2021 3:00 PM - 4:30 PM Track5)

[II-JCK03-4] Initial clinical experience of the biodegradable Absnow™ device for percutaneous closure of atrial septal defect in human

○Zhi-Wei Zhang （Guangdong Pravincial Cardiovascular Institute, China）

(Sat. Jul 10, 2021 3:00 PM - 4:30 PM Track5)

[II-JCK03-5] The advantage of hybrid stage 1 for hypoplastic left heart syndrome（ HLHS） - Effects on the growth of pulmonary artery -

○Shigeki Yoshiba （Saitama Medical University International Medical Center, Japan）

(Sat. Jul 10, 2021 3:00 PM - 4:30 PM Track5)

[II-JCK03-6] Efficacy of transcatheter pulmonary valve perforation by micro-guidewire and balloon dilation in neonates with pulmonary atresia with intact ventricular septum

○Yurong Wu, Chen Sun, Wu Yurong, Yang Jianping, Jiao Xianting, Jin Wenhao, Sun Kun （Pediatric Cardiology, Xinhua Hospital Aliated to Shanghai Jiaotong University School of Medicine, China）

Objectives:
Pulmonary atresia with intact ventricular septum (PA/IVS) is a rare type of severe cyanotic congenital heart disease. Due to the different degrees of ventricular development, there is no uniform treatment plan. This study was designed to investigate the safety and efficacy of transcatheter perforation of pulmonary valve by micro-guidewire and balloon dilation in the treatment of neonatal PA/IVS.
Methods:
This is a retrospective study that containing 21 cases (14 male, 7 female) of neonates with PA/IVS who underwent transcatheter micro-guidewire pulmonary valve perforation and balloon dilation in XinHua hospital from January 2012 to December 2018. All patients underwent the pulmonary valve perforation by micro-guidewire through the Simmons catheter. Postoperative follow-up was done at 1 month, 3months, 6months, 1 year and every year thereafter mainly by echocardiography to evaluate the operative efficacy and the development of the right ventricle (RV). T-test test was used for the comparison between groups.
Results:
A total of 21 neonates with PA/IVS were enrolled, and 13 cases were diagnosed prenatally. The median age of surgery was 6 days, the average weight was (3.18±0.49) kg, and the minimum weight was 2.25 kg. The balloon/valve ratio was 1.19±0.12, and the times of dilation was 2.19±0.40. The preoperative blood oxygen saturation was (79.05±7.25) %, and the right ventricular pressure measured by catheter was (121.00±32.69) mmHg. The immediate postoperative pressure was (47.43±12.82) mmHg, and postoperative blood oxygen saturation was (90.71±4.36) %. The median follow-up time was 30 months, and the longest follow-up time was 53 months. All the cases enrolled achieved double ventricular circulation without death and serious complications. According to the last follow-up data including 16 cases which were followed up over 1 year, the pulmonary artery transvalvular pressure was (29.29±15.03) mmHg. Compared to the pre-operation data, the mean transverse diameter of RV was significantly higher[(0.86±0.10)比(0.73±0.13)， t=-2.96, P=0.006]. The pulmonary valvular diameter z-scores was significantly higher [(-1.41±0.89)比(-2.83±1.06)， t=-3.65, P=0.001]and the tricuspid valvular diameter z-scores was significantly higher [(-0.52±0.29)比(-1.34±0.81)， t=-3.55, P=0.001] as well. 8 cases received re-intervention during the follow up, and the median time for re-intervention was 3.0 months.

Conclusion:
Transcatheter pulmonary valve perforation by micro-guidewire and balloon dilation are safe and effective first-stage treatment for neonatal PA/IVS. A significant development was obtained in the right ventricle after an early intervention according to the follow up.

(Sat. Jul 10, 2021 3:00 PM - 4:30 PM Track5)

[II-JCK03-7] A single center experience in percutaneous pulmonary valve implantation using melody valve and newly made self-expandable valved-stent

○Ah Young Kim （Pediatric Cardiology, Yonsei University College of Medicine, Korea）

JCK Session

Session 04（ II-JCK04）

Adult Congenital Heart Disease

Chair:Teiji Akagi（Okayama University, Japan）
Chair:Maoping Chu（Pediatric Cardiology, Second Clinical Medical School, China）
Chair:June Huh（Pediatrics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea）
Sat. Jul 10, 2021 4:40 PM - 6:40 PM Track5 (Web開催会場)

[II-JCK04-1] Adult congenital heart disease
○Kiyotaka Takefuta （International University of Health and Welfare, Japan）

[II-JCK04-2] Pathophysiology of Fontan circulation and treatment strategy to establish Super-Fontan
○Yiu-Fai Cheung （Department of Paediatrics and Adolescent Medicine, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong）

[II-JCK04-3] A non-invasive nanoparticles for multimodal imaging of ischemic myocardium
○Jie Tian （Heart Center, The Children's Hospital of Chongqing Medical University, China）

[II-JCK04-4] Metabolic syndrome and renal disease in ACHD patients
○Norihisa Toh （Department of Cardiology, Okayama University, Japan）

[II-JCK04-5] Surgical management in adults with congenital heart diseases
○Jae Gun Kwak （Department of Thoracic and Cardiovascular Surgery, Seoul National University Children's Hospital, Seoul National University, College of Medicine, Korea）

[II-JCK04-6] Pregnancy, What is the challenge in Adult Congenital Heart Disease with Heart Failure?
○Lucy Youngmin Eun （Associate Professor, Pediatric Cardiology, Yonsei University College of Medicine, Seoul, Korea）

[II-JCK04-7] Hemodynamics and surgery in adult congenital heart disease
○Keiichi Itatani （Osaka City University, Japan）

[II-JCK04-8] De ritis ratio in Kawasaki disease
○Yunjia Tang （Department of Cardiology, Children's Hospital of Soochow University, China）

[II-JCK04-9] Aortic root replacement in adult congenital heart disease
○In-Seok Jeong （Department of Thoracic and Cardiovascular Surgery, Chonnam National University Hospital and Medical School, Korea）

(Sat. Jul 10, 2021 4:40 PM - 6:40 PM Track5)

[II-JCK04-1] Adult congenital heart disease

○Kiyotaka Takefuta （International University of Health and Welfare, Japan）

(Sat. Jul 10, 2021 4:40 PM - 6:40 PM Track5)

[II-JCK04-2] Pathophysiology of Fontan circulation and treatment strategy to establish Super-Fontan

○Yiu-Fai Cheung （Department of Paediatrics and Adolescent Medicine, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong）

(Sat. Jul 10, 2021 4:40 PM - 6:40 PM Track5)

[II-JCK04-3] A non-invasive nanoparticles for multimodal imaging of ischemic myocardium

○Jie Tian （Heart Center, The Children's Hospital of Chongqing Medical University, China）

(Sat. Jul 10, 2021 4:40 PM - 6:40 PM Track5)

[II-JCK04-4] Metabolic syndrome and renal disease in ACHD patients

○Norihisa Toh （Department of Cardiology, Okayama University, Japan）

(Sat. Jul 10, 2021 4:40 PM - 6:40 PM Track5)

[II-JCK04-5] Surgical management in adults with congenital heart diseases

○Jae Gun Kwak （Department of Thoracic and Cardiovascular Surgery, Seoul National University Children's Hospital, Seoul National University, College of Medicine, Korea）

Basically, surgical treatments per se for heart failure in adults with congenital heart diseases (ACHD) seem not different from usual acquired heart disease patients; 1. Corrective surgeries for structural (obstruction, regurgitation, etc.) or pathophysiological (rhythm disturbance, ventricular synchrony, etc.) problems causing heart failure, 2. Mechanical cardiac support using extracorporeal membranous oxygenator (ECMO) or ventricular assist device (VAD) until recovery or heart transplantation (TPL), 3. Eventual heart TPL. However, in terms of the timing, indications or even surgical approaches for aforementioned each surgical option, it seems much more difficult to apply general indications which are applied to usual adult heart disease patients for our patients' group, because our ACHD patients have various anatomical and pathophysiologic features that must be associated unique hemodynamical

problems causing heart failure.
Now, I am going to share a couple of nightmare cases associated with heart failure in ACHD that required corrective surgeries, mechanical supports or even all of these surgical options within one admission, and I eventually emphasize more meticulous and cautious approach are mandatory for surgical treatment of heart failure in ACHD.

(Sat. Jul 10, 2021 4:40 PM - 6:40 PM Track5)

[II-JCK04-6] Pregnancy, What is the challenge in Adult Congenital Heart Disease with Heart Failure?

○Lucy Youngmin Eun （Associate Professor, Pediatric Cardiology, Yonsei University College of Medicine, Seoul, Korea）

Knowledge of the risks associated with cardiovascular problem in congenital heart disease during pregnancy and their management in pregnant women who suffer from serious pre-existing conditions is essential for advising patients before pregnancy. So, all women with known congenital heart disease who wish to embark on pregnancy require timely pre-pregnancy counselling. Informed maternal decision making is crucial and there is a clear need for individualized care, taking into account not only the medical condition, but also the emotional and cultural context, psychological issues, and ethical challenges.
Especially, in high risk or possible contraindication of pregnancy, the exact risk of pregnancy and the necessity of careful planning of pregnancy should be discussed. The risk of pregnancy depends on the underlying heart defect as well as on additional factors such as pulmonary hypertension, ventricular dysfunction, unfavorable functional class, and cyanosis. Maternal cardiac complications are more frequent in complex congenital heart diseases, and heart failure. The patients should be advised the pre-pregnancy management includes the modification of existing heart failure medications to avoid fetal harm. Additional bromocriptine to standard heart failure therapy may improve LV recovery and clinical outcome in severe peri-partum heart failure.
A multidisciplinary management plan should be constructed and discussed with the patient and family before pregnancy, during pregnancy, and after pregnancy.

(Sat. Jul 10, 2021 4:40 PM - 6:40 PM Track5)

[II-JCK04-7] Hemodynamics and surgery in adult congenital heart disease

○Keiichi Itatani （Osaka City University, Japan）

(Sat. Jul 10, 2021 4:40 PM - 6:40 PM Track5)

[II-JCK04-8] De ritis ratio in Kawasaki disease

○Yunjia Tang （Department of Cardiology, Children's Hospital of Soochow University, China）

(Sat. Jul 10, 2021 4:40 PM - 6:40 PM Track5)

[II-JCK04-9] Aortic root replacement in adult congenital heart disease

○In-Seok Jeong （Department of Thoracic and Cardiovascular Surgery, Chonnam National University Hospital and Medical School, Korea）