APHRS Asia Pacific Heart Rhythm Society

News Sep. 2016, No. 27

Kiyo Tokyo Building 6F, 2-5 Kanda Ogawamachi, Chiyoda-ku, Tokyo 101-0052 E-mail: office@aphrs.org
TEL: +81-3-3219-1956 FAX: +81-3-3219-1955

www.aphrs.org



Chief editor:

Kazuo MATSUMOTO

Deputy editor:

Hsuan-Ming TSAO Yoga YUNIADI

Managing editor:

Yenn-Jiang LIN Giselle GERVACIO Vanita ARORA David HEAVEN Kathv LEE Seong-Wook HAN Yasushi MIYAUCHI Takashi KURITA Masataka MITSUNO Hiroshi NAKAGAWA Tetsuo YAGI Young Keun ON Teiichi YAMANE Anil SAXENA Kohei YAMASHIRO David Chung-Wah SIU

CONTENTS

P1 We welcome you to the 9th Asia Pacific Heart Rhythm Society Scientific Session in Seoul!

P2 Greetings from the Japanese Heart Rhythm Society

P3 Asia Pacific Atrial Fibrillation Awareness Campaign for Stroke Prevention

P9 Atrial Fibrillation Campaign

P13 AF Day 2016 Thailand

P17 Integrated Implanter Crash Program (I2CP)

P20 Sardjito Hospital EP Center: The First EP Center

Outside The Capital of Indonesia

P24 APHRS 2016

We welcome you to the 9th Asia Pacific Heart Rhythm Society Scientific Session in Seoul!

The biggest meeting of the year that APHRS hosts awaits you in Seoul, Republic of Korea, in October.

Congxin HUANG

It will be a tremendous honor to have you with us at the 9th APHRS scientific session ready to provide the most exciting and unique experience you've ever had.

The field of arrhythmia in the Asia Pacific region has shown great progress in recent years, and in the center of it lies the Asia Pacific Heart Rhythm Society, which now takes rank with Heart Rhythm Society (USA) and European Heart Rhythm Association (EHRA).

This year's Seoul meeting will be a great opportunity to understand today's medical trends and developments in the sphere of arrhythmia and to keep abreast of up-to-date clinical trials/studies through more than 200 sessions. Special sessions such as "Help Me, Master!", "Anatomy Session" for encouraging

active discussion and debate as well as to exchange experiences, "Breakfast with Master" for offering exclusive networking chances with grand masters should not be missed particularly.

Indeed, the upcoming meeting is ready for you to enjoy under a "formality-free" environment where participants can walk around comfortably in their casual shoes wearing no ties. This would enable participants to share their ideas and experience in a free and efficient manner while creativeness and inspiration blooming everywhere.

We welcome you to this year's APHRS scientific session and promise you an extraordinary meeting where the *sharing* of your experiences will *inspire* you and *bloom* further growth for future prosperity just like our official slogan "Sharing, Inspiring, and blooming."

Youghlim

Young-Hoon KIM

President, Local Organizing Committee of APHRS 2016

1 m

Wee Siong TEO
President, APHRS



Greetings from the Japanese Heart Rhythm Society

Kenzo Hirao

President of the JHRS
Professor of Medicine, Tokyo Medical and Dental University, Tokyo, Japan



Professor Kenzo Hirao, President of the JHRS

It is an honor for me to be able to extend my greetings as the new President of the JHRS in this APHRS newsletter. The present JHRS was established by a merger between the

Japanese Society of Electrocardiology (JSE) and the Japanese Heart Rhythm Society (former JHRS) in May 2015. I would like to introduce the background of the integration, current status, and future prospects of our society.

Japan has a long history of studying electrocardiology, electrophysiology, and cardiac arrhythmias, with many of our predecessors having shown new findings in basic and clinical research. In 1986 the Japanese Society of Cardiac Pacing was established by clinical arrhythmia specialists, who antecedently founded the Pacemaker Study Group in 1971 and the Cardiac Pacing Meeting in 1977. The former JHRS members studied and worked mainly on the non-pharmacological treatment or surgical treatment of arrhythmias.

In the meanwhile, the JSE was established in 1983, following the 9th International Congress of Electrocardiology, by the researchers and clinicians in the field of both basic and clinical electrocardiology, electrophysiology, and pharmacological treatment.

Two societies, the JSE and JHRS (former), had developed independently, pursuing their own aims and goals for more than 30 years.

In 2015, after a long and careful preparation by the former presidents of the two societies and committee members, the JSE and JHRS merged to become a new society, the (new) JHRS. Now the number of the new JHRS members has reached to 8500, which includes physicians and various kinds of medical professionals. I believe that the academic framework of electrocardiology, cardiac electrophysiology, and arrhythmias could span more widely, from basic science, and pharmacological and non-pharmacological treatments to surgical treatment, which would allow us to make further advancements in the research, education, and clinical medicine.

I do hope that we, the JHRS members, will wish to firmly cooperate with the APHRS members in order to provide greater benefit for all the people suffering from cardiac arrhythmias by working together to improve the clinical medicine and research in the field of cardiac arrhythmias.

Finally, I would like to inform you of the opening of the Annual Meeting of the JHRS2017, which will take place from September 14th through 17th, at in Yokohama. This congress will be held jointly with the 10th Annual Meeting of the APHRS (President: Ken Okumura, M.D.), thus featuring a much larger scale and stronger international representation than usual.

I sincerely hope that the APHRS members will visit Japan and join our Meeting JHRS2017 and APHRS2017 meetings in the coming next year.

Asia Pacific Atrial Fibrillation Awareness Campaign for Stroke Prevention

Atrial Fibrillation (AF) is the most frequent arrhythmia in clinical practice. Patient with AF has 5 times risk of stroke as compare to that without AF. Many of AF patients come with stroke as their first symptom. Asia Pacific Heart Rhythm Society (APHRS) conducts massive AF Campaign for stroke prevention in all country members on July 2016. This event is aimed to raise the awareness of AF among public and medical practitioners. Country to country AF campaign activities are presented in this report.

Australia

APHRS partnered with the "hearts4heart" foundation in Australia to raise public awareness on AF in conjunction with the APHRS AF Awareness Month 2016. The one week campaign from the 4th to the 10th of July was a huge success in Australia with over 30 sites participating in either AF screening



The Honourable Jack Snelling MP, Minister for Health being screened at the South Australian Parliament on the 6th of July.



Screening event at the St John of God Frankston Rehabilitation Hospital, VIC.



Prof. Andrew MCGAVIGAN (APHRS Country Representative of Australia) together with Ms. Tanya HALL (CEO and Founder of hearts4heart).

events or AF education days. A screening event was also held in the South Australian Parliament on the $6^{\rm th}$ of July.

The "hearts4heart" foundation received wonderful feedback from all of the hospitals that participated in the campaign. Over 1000 people were screened for AF and in many cases there were lines of people waiting to be screened. There were quite a number of AF cases detected in unaware participants. Ms. Tanya HALL, the CEO and Founder of "hearts4heart" also received numerous calls from public who has experienced symptoms and wanted more information on AF.

The campaign also received an overwhelming response from Australia national media. In brief, 5 interviews were done on radio in various states. The campaign has been featured in many newspapers across the country and also on NBN TV news.



Screening event at the South Australian Parliament.



Screening event at the Monash Heart, VIC.



A group photo taken after the screening event at South Australian Parliament.

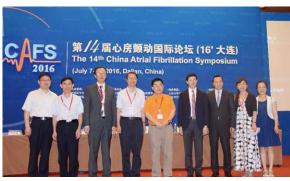


China

In China, "The 14th China Atrial Fibrillation Symposium" was held as a joint effort to raise AF awareness in conjunction with the APHRS AF Awareness Month 2016. The symposium was held in Dalian on 8-10 July 2016 and it was well attended by physicians across China. Prof. Congxin HUANG was the organizing chairman of this AF symposium.



Prof. Congxin HUANG (APHRS Country Representative of China) gave the opening remarks at the $14^{\rm th}$ China Atrial Fibrillation Symposium.



A group photo the organizing committee.

Hong Kong

Aiming to raise public awareness on AF, the Hong Kong College of Cardiology organized a series of educational events during the "APHRS AF Awareness Month 2016" throughout the month of July 2016. Activities like media interviews, health talk, free electrocardiogram tests for the public and press conference were held.

There were over 260 participants attended the health seminar on the morning of 30 July 2016. The guest speakers of the seminar were Dr. Ngai-Yin CHAN and Dr. Cyril KO; while Dr. Frank TAM was the chairperson. The topics were "Are you at risk of AF?" and "Medical Treatment of AF". After the talk,

the participants underwent ECG screening with the AliveCor device.

A press conference on the survey results of AF awareness among Hong Kong citizens and the acceptance of adopting e-health technology was successfully held on 31 July 2016. Masters of Ceremonies were Dr. Victor LEE and Dr. Ngai-Yin CHAN; while Dr. Chu-Pak LAU, Dr. Shu-Kin LI and Dr. David SIU were the speakers.



(Left to right) Dr. Frank TAM, Dr. Cyril KO and Dr. Ngai-Yin CHAN during the health talk on 30 July 2016 in Hong Kong.



(Left to right) Dr. Ngai-Yin CHAN, Dr. Shu-Kin LI, Dr. Chu-Pak LAU, Dr. David SIU, Ms. CHO (patient sharing) and Dr. Victor LEE during the press conference in Hong Kong on 31 July 2016.



Media interview with Dr. Kathy LEE (lady on the right hand side).



Media interview with Dr. Cheuk-Man YU (gentleman in the middle).



India

Under the leadership of Dr. Balbir SINGH (APHRS Country Representative of India), many activities were planned in India in conjunction with the APHRS AF Awareness Month 2016. A "Check My Pulse" campaign was held in different hospitals across India. Besides, a public forum on AF and stroke prevention was held in Medanta, The Medicity Hospital to educate patients. Local cardiology societies also launched some continuing medical education (CME) activities to educate general physicians on AF and stroke prevention. A briefing about AF was broadcasted on local radio to reach out to a wider community. India is still continuing on the efforts to raise awareness on AF among the population.

Indonesia

In line with APHRS AF Awareness Month 2016, Indonesian Heart Association (IHA) and Indonesian Heart Rhythm Society (InaHRS) conducted a full week of AF campaign across archipelago of Indonesia. All branches of IHA simultaneously launched this AF campaign for stroke prevention starting from 23rd to 31st of July 2016. Activities held were free surface ECG recording, AF symposium for both public and general practitioners, full week media coverage of the AF campaign, fun family activities, and government endorsement of this campaign. A more detailed report of AF campaign in Indonesia can be found in this issue of our newsletter.

Myanmar

Dr Nwe NWE (APHRS Country Representative of Myanmar) together with her team in Yangon

General Hospital, Myanmar had produced a public education video on AF in Burmese language. The video was then broadcasted on the Myanmar Television Channel, MRTV in the month of July as an effort to raise public awareness on AF in Myanmar.

Pakistan

In Pakistan, the AF Awareness Day was held on the 12th July, 2016. Most of the teaching hospitals were engaged to highlight the growing epidemic of AF. Seminars were held at different levels in many district hospitals. The growing magnitude of the AF in the Asia-Pacific region was highlighted. According to Prof. Zahid Aslam AWAN (APHRS Country Representative of Pakistan), Pakistan started the first AF ablation at the Post Graduate Medical Institute, Hayatabad Medical Complex, Peshawar. The hospital also emphasized on the screening of AF for every patient aged 60 years and above who visited the hospital for all reasons. The INR clinics also were stressed on the screening at the primary level.

Philippines

An AF lay forum was held at the St. Lukes Medical Center on the 29th July, 2016 in conjunction with APHRS's effort to raise public awareness on AF across the Asia-Pacific region. Philippines also started on setting up the first AF clinic in the country and it will be formally launched on the first week of September 2016. Philippines is currently working on the creation of an AF jingle with animated video, which will be launched on social media very soon once the permission is granted from the composer, said Dr. Giselle GERVACIO (APHRS Country Representative of Philippines).



New Zealand

New Zealand participated in the APHRS AF Awareness Month 2016 in late July. In addition, New Zealand National Heart Foundation is also running a nationwide AF Awareness Campaign in August as a continuous effort.

Dr. Matt WEBBER and Dr. Martin STILES, with enormous amounts of support and assistance from

Senior Nurse Specialists from different hospitals; and staffs from the New Zealand Heart Foundation had successfully organized many activities in the Midland region and Wellington region of New Zealand. Activities held were AF posters display, screening events and education events for general practitioners in different hospitals. The campaign attracted a lot of public interest and most patients were given information about AF and some risk factors advice.



Dr. Stiles (right) takes a lead in organizing various activities.



Dr. Martin Stiles (left) and Barbara Stewart (NZ First List MP).



Dr. Matt Webber (second from right) with screening staff members.



A view of the screening booth.



Singapore

In Singapore, APHRS partnered with the Singapore Heart Foundation (SHF) to launch an AF public forum in both English and Mandarin on the 2nd of July, 2016. There were more than 400 attendees for the English session while the Mandarin session in the later part was attended by around 250 attendees. The public forum was glorified by the appearance of Dr Pin Min LAM, Minister of State, Ministry of Health as the Guest-of-Honour. Exhibition

booths were located outside of the hall where public underwent handheld ECG screening and other activities. On the same day afternoon, a GP forum was held to educate general practitioners on AF. The forum was a joint effort by APHRS and the Singapore Cardiac Society (SCS). About 200 general physicians attended the forum. Prior to the actual events, preevent promotions like radio interviews, AF articles on newspaper, and others were introduced to increase awareness on AF.



The APHRS Public Education Forum on the 2nd of July, 2016.



Dr Wee Siong TEO (President of the APHRS) explained "What is Atrial Fibrillation?"



Crowd at the exhibition area.



The GP forum in the afternoon was well-attended.



Taiwan

The Taiwan Heart Rhythm Society (THRS) launched the public campaign focusing on AF in Taiwan on the 30th June 2016 in conjunction with APHRS AF Awareness Month 2016. In Taiwan, more than 200,000 people are suffering from AF and the number is still increasing. THRS held a series of intensive public AF education talks at 22 medical institutions on the first week of July. THRS used the high speed train to symbolize the theme "Start the Journey of a Healthy Heart with the Rhythm of the Train" in the hope of enabling more people to understand better and pay more attention to the association of AF and stroke. THRS also launched the "Atrial Fibrillation 543, the Reassuring Self-testing" for public to perform a self-test on their own heart rhythm through this simple slogan.

"Atrial Fibrillation 543, the Reassuring Self-testing"

5 major AF populations – elderly, hypertension, diabetes, heart failure and hyperthyroidism

4 major symptoms – palpitations, chest tightness, dizziness/weakness and shortness of breath

3 major radial pulse indicators – sudden changes of rapid & slow, large & small and strong & weak

THRS launched the first "AF Education Website" (www.afhealthcare.org.tw) in Taiwan on July as well. People can learn more about AF such as comprehensive information on AF prevention and treatment, dietary management, as well as a list of arrhythmia specialists in Taiwan from this website. A more detailed report of AF campaign in Taiwan can be found in the previous issue of our newsletter.

Thailand

Simultaneously on the 2nd of July 2016, Thailand joined Singapore and Taiwan in the effort to increase public awareness on AF. Under the leadership of A/Prof. Khanchit LIKKITTHANASOMBAT (Chief of the Thai EP Club) and Dr. Tachapong NGARMUKOS (APHRS 2nd Secretary General and Country Representative of Thailand), Bangkok organized an "AF Day" 5km run/walk event with a public forum on that day. Pre-event publicity programs were introduced to reach out to a wider population, among them were TV and radio interviews, morning TV news, AF article on health magazines and social networking. A new and catchier term for AF in Thai, "hui jai ten rarik หัวใจเต้นระริก" was also introduced to make AF more memorable for the public. The heavy thunderstorm in the early morning of the actual event day didn't stop most of the registrants to turn up. The 5km run/walk was completed and a good number of people stayed around through the rain to participate in the patient forum and other games and activities. Overall the event was well received, judging from the feedbacks on social media. A more detailed report of AF campaign in Thailand can be found in this issue of our newsletter.

Vietnam

An AF related article in Vietnamese language was published on the 2nd of July, 2016. The article was written by Dr. Quoc Khanh PHAM (APHRS Country Representative of Vietnam) and published on the local health newspaper. The article explained about AF and its risk factors. It served the purpose of supplying knowledge and improving awareness in the community about the dangers of AF.



Atrial Fibrillation Campaign

Across Indonesian Archipelago

Indonesia is a big country consist of thousands islands. There are 34 provinces and more than 10 major islands. The population are more than 260 million. Nearly a thousand cardiologists serve the people across the country. They are member of Indonesian Heart Association (IHA) which has branches in all provinces. All IHA branches were actively involved during atrial fibrillation (AF) campaign.

Atrial Fibrillation is one of the important disease in Indonesia, it is estimated suffered by 2.4 million people of Indonesia. Many of AF patients in Indonesia suffered from stroke as their first symptom and many were in their productive ages. In addition, risk factors of AF are common in Indonesia. Hypertension suffered by more than a quarter of Indonesian above 18 years old and more than 2% of population were diagnosed to have diabetes mellitus. Chronic obstructive pulmonary disease, coronary artery disease, hyperthyroid, and heart failure are among of the top-ten non-communicable diseases in Indonesia.

In line with the Asia Pacific Heart Rhythm Society (APHRS), IHA and Indonesian Heart Rhtyhm Society (InaHRS) conducted a full week of AF campaign across archipelago of Indonesia. Starting from 23rd to 31st of July 2016, all IHA branches simultaneously perform AF campaign for stroke prevention. The highlight of this activities are compile in this report

Type of activities

1. Free surface ECG recording

All IHA branches conducted a free ECG recording for public. This activities was conducted in public places such as, car free day area, hospital waiting room, mosque, shopping mall, public hall, etc. The program were held in 31 branches of IHA at big Indonesian cities (see Map). There are at least 6209 people join the program. Health care providers involved are cardiologist, general practitioners, and nurses. Atrial Fibrillation was found in 258 recordings (approx. 4%).





Figure 1. Upper: Map of Indonesia archipelago. The red dots show cities and IHA branches who conducted AF campaign activities. Lower: surface ECG recording at public area in Manado and at mosque in Yogyakarta cities.



2. Promote AF awareness for public and general practitioners

Knowledge of Atrial fibrillation is still low in Indonesian people. A free public counseling is

conducted throughout in almost 31 big cities across the country. The main focus for public awareness counseling are the signs, symptoms, and stroke risk of AF. The free symposium is also conducted for general practitioners as AF knowledge refreshment.



Figure 2. Clockwise fro top are AF awarness for public and general practitioners at Mataram, Manado, East Java and Palembang.

3. Full week media coverage

The AF awareness campaign has been broadcasted in 2 major national television and several local television. Talkshows about AF

awareness has been held in several television broadcasters. Other coverage also includes in radio, newspapers, magazines, social media, and online articles.



Figure 3. Media coverage of AF campaign included national and local television broadcast, radio broadcast and articles in magazines and newspaper.



4. Fun family activities

One of the program conducted during AF campaign is fun family activities during Sunday. At the car free day occasion, IHA held some activities such as fun bike, aerobic, and music performance. This activities held in almost all major cities across

Indonesia. During this time, a lot of people gathered for some outdoor activities in which the campaign are held. The comitee wears a polo shirt contained words of AF campaign on stroke prevention. Atributes and promotional materials also spread along the people on the street.



Figure 4. Fun and family activities during AF campaign included fun bike at Jakarta, mass dance at Manado, gathering at Bali and singing performance at Jakarta. (Clockwise from top)

5. Government endorsement

Approach to the government as a stakeholders were done. In several major cities, government

liaisons such as governor, major, and health department representatives is join the program. Thus, empowering the effect of this campaign to be a national awareness.







Figure 5. Upper: Vice mayor jogs together with IHA members and public of Manado city. Lower: Army and government liaison actively involved during AF campaign at Makassar and Java.

AF Day 2016 Thailand

Dr. Tachapong Ngarmukos

Ramathibodi Hospital, Mahidol University, Thailand

As part of the APHRS effort to increase public awareness on atrial fibrillation (AF) in Asia-Pacific region, APHRS initiated a joint collaboration with its member countries to achieve the objective. Simultaneously on July 2, 2016, Taiwan, Singapore and Bangkok organized an event to raise public awareness on AF.

In Bangkok, under the leadership of Associate Professor Khanchit Likkitthanasombat, the Chief of Thai EP Club and President-elect of the Thai Heart Association of Thailand under the Royal Patronage of H.M. the King, arranged a free "AF Day" 5km walk/run event with a public forum in the early hour of July 2, 2016. To reach out to more population, preevent programs were introduced including TV and radio interviews, morning TV news, and health magazine articles on AF, as well as social networking to reach out. We coined a new term in Thai for AF "hui jai ten rarik หัวใจเต้นระริก", a more catchy term, to make AF more memorable for the public.



Fig. 1. Dr. Tachapong Ngarmukos went on television programs to raise awareness on AF and promote AF Day walk/run event.

There were 3 key messages featured during the campaign:

- 1. AF is a common cause of severe stroke
- 2. Stroke from AF is preventable
- 3. AF could be detected by checking one's pulse

There were more than 4300 people registered for the walk/run event. However, the registration had to be terminated early due to overwhelming response and the venue could not accommodate

more than 4000 people. A few prominent figures join in to open the event and join the walk/ran program, Mr. Ormsin Chivapruck (Deputy Minister of Transport), Mr. Pisit Leelavachiropas (Auditor General: Office of the Auditor General of Thailand), Professor Ratchata Ratchatanawin (former Minister of Ministry of Public Health), Associate Professor Taworn Suithichaiyakul (President of the Thai Heart Association), stars from singing contest show "Academy Fantasia" also joined the program





Fig. 2. Atmosphere at the Lumpinee Park on the evening before and early morning in the rain on July 2, 2016. Mobile AED team is getting ready. Runners are getting ready.



Fig. 3. (Upper Left) Prof. Ratchata Ratchatanawin joining the warm up session prior to the run. (Upper Right) Getting ready at the starting line! (Lower Left) Standing with red sleeves A/Prof. Khanchit Likkithanasombat, Prof. Ratchata Ratchatanawin, Mr. Ormsin Chivapruck, Mr. Pisit Leelavachiropas, and A/Prof. Taworn Suithichaiyakul also with red sleeves. Squatting front are stars from the Academy Fantasia singing contest. (Lower Right) Ready...Set...Go!!!

Due to thunderstorm on the event day, only about 1300 registrants had shown up. The walk/run was completed but the forum was less attended. Yet a good number of people who were really interested in AF stayed around throughout the rain, participated in activities, games, patient forum and

Q&A session about AF and stroke prevention. The event was well received, judging from the feedbacks on social media. Many are already looking forward to our next event. We received cooperation and support from many people and organizations.



Fig. 4. Running in the rain.

The Thai EP Club members would like to sincerely thank our sponsors for their financial & physical supports, including Boston Scientific, Biosense Webster, Bayer, Medtronic, Harn Thai Pharma, St. Jude Medical, Boehringer Ingelheim, Saint Med, Servier, Daiich Sankyo, ATB, Novo Nordisk, as well as Dutch Mill, 100PLUS, Farmhouse, Spoon and Ovaltine for their generous support for drinks and snack for participants of AF Day 2016 Thailand.

Air-time for TV interview and news were free of charge from all the broadcast companies, including the Thai public broad cast company, Thailand news network and educational radio service from Ministry of Education with the help of connection from Rama Channel. Many thanks to Channel 3 and Thairath as well. In conclusion, the AF Day in Thailand was a very successful one with the cooperation from all parties involved.



Fig. 5. After the walk/run, trophies were awarded to the winners and medals for finishers, as well as snacks and drinks for everyone. Each tent is a station for educational games and activities.





Fig. 6. Other activities such as patient education, Q&A, how to check your pulse (as demonstrated by Dr. Thoranis Chantararat & Khanchit Likitthanasombat), patient interview and educational games after the walk/run event.



Fig. 7. Members of the Thai EP Club.

Address for correspondence: Tachapong Ngarmukos, M.D., Division of Cardiovascular Disease, Department of Internal Medicine, Ramathibodi Hospital, Mahidol University; Rama 6 Road, Bangkok 10400, Thailand; Fax: +66-2-354-7233; E-mail: tachapong.nga@mahidol.ac.th



Integrated Implanter Crash Program (12CP)

Benny Hartono, Dicky A Hanafy, Yoga Yuniadi

Indonesia Heart Rhythm Society (InaHRS)

Pacemaker implantation rate in Indonesia is quite low. The pacemaker implantation rate per million population is only 2.8; which is the lowest in the Asia Pacific region. If comparing the number of centers that are able to implant pacemaker per million populations is also quite low, which is 0.05. This is not because of low prevalence of cardiac rhythm disorders, which is probably the same as anywhere else. There are many factors which contribute to the low number of implantations such as insurance coverage, social-economy burden, awareness of the people and lack of implanting centers and physician. Another challenge for providing even health care throughout Indonesia is the infrastructure due to its island archipelago. Situated between the Indian and Pacific oceans, Indonesia is the world's largest island country, with more than thirteen thousand islands. There are 8,844 islands which have been named according to estimates made by the Indonesian government, with 922 of those permanently inhabited. It has an estimated population of over 258 million people and is the world's fourth most populous country, as well as most populous Astronesian nation.

Since the last 2 years our government has implemented a National Universal Coverage Insurance, which is named Badan Penyelenggara Jaminan Sosial (BPJS) for health care coverage. This program eventually has a big impact on the number of patients that need implantation which increased

significantly, since it made possible for many patients who before were not financially capable, have now the possibility to get medical care, ergo pacemaker implantation, covered by BPJS. Because of the uneven distribution of implanting physicians, since last year the Indonesian Heart Rhythm Society (InaHRS) has conducted a breakthrough crash program to increase the number of implanters to cover the separate provinces all over Indonesia.

On April 2015, we have launched an Integrated Implanter Crash Program (I2CP) purposed to increase the number of pacemaker implanters particularly single chamber pacemaker implantation in Indonesia. Emphasis is put on single chamber pacemaker with lead placement in the right ventricular apex because of the relative simplicity of the procedure and the low risk of complication. Although not ideal, but mortality can be significantly reduced in patients with total AV block even with single chamber pacemaker. The intention is to provide fast distribution to the periphery of Indonesia, so that patients do not need to travel long distances to get to implanting centers. Since BPJS only covers the hospital cost but not the travel or accommodation costs, it is for many patients not possible to travel long distances to get to established implanting centers. BPJS also applies 3 categories of care with different reimbursement, consisting of category A, B and C hospitals. Category A is a tertiary hospital usually in the state capital, B for secondary care in the district and C for primary



Fig. 1. Participants practicing anatomy of the heart and how to insert the lead into the goat heart.



Fig. 2. Real time simulator training the technique to shaping, curving the lead into the heart in the real case scenario.





Fig. 3. Instructors and participants in the I2CP batch III.

care in the periphery. Dual chamber pacemaker is only reimbursed in the category A hospital and single chamber pacemaker in category B hospital. Since there are far more category B than A hospitals, reimbursement will only be enough for single chamber pacemaker implantation except for these patients who are willing to travel longer distances to get to a category A hospital. But not even all category A hospitals are able to implant pacemakers because there is lack of training of the resident cardiologist. Reimbursement in a category C hospital is very low so that it is usually not possible to do an implant there. But this is still in negotiation with the BPJS and department of health, so that hopefully in the near future single chamber pacemaker is reimbursed in the category C hospital and dual chamber pacemaker in the category B hospital.

The program is intended for cardiologists who are working in hospitals with minimal category B, have catheterization laboratories or C-arm facilities and have the intention to implant pacemaker. The program comprises of 3 stages of training which are: (1) Internet based learning and examination, (2) Wet-lab training and (3) Proctorship training. In the first stage, participant are given learning materials through our website and they need to have an electronic examination one week later. After passing the examination, participants will join a 2 days wet-lab training, which include lectures from local experts and hands-on implantation technique in the laboratory with heart model, goat heart, suture technique and simulator. This is done at the National Cardiovascular Center Harapan Kita in Jakarta, but in the future will be expanded to other major cities.

Then in the last stage, participants need to collect patients with indication for pacemaker implantation in their hospital, and implantation will be proctored and supervised by experienced instructors who will come for the procedure to the participant's home-based hospital. They need to collect 5 patients within 3 months to complete the entire training program. During theses 5 procedures, these instructors will evaluate the participants whether afterwards they are competent to do the single chamber pacemaker implantations independently or need to have more cases done under supervision.

Since the first I2CP started until today, we have run 7 batches of this program with participant in each batch varying between 7-10 physicians, with an overall total of 57 participants. About 25% of the participants have finished the entire program and received certificate of completion of training, certifying them competent in implanting single chamber pacemaker. They are now regularly implanting pacemaker independently, one of them has already implanted 28 pacemakers since completion of training 1 year ago. The other participants who have not completed the training requirements, have varying number of implantations supervised by I2CP instructors and need to finish all 5 cases.

I2CP program has given a significant impact in increasing the number of implanting centers and physicians. The number of centers that do implantation have increased about 20% and the number of implanters have increased about 40% compared to our data in 2014. The total number of



pacemaker implanted is also automatically affected significantly. Our plan is to continue I2CP for the next 3 years to generate more and more new implanters

for better distribution spreading through all the cities in Indonesia from the far west of Sabang to east of Merauke.



Fig. 4. In the wet-lab: Knowing the anatomy of the heart.



Fig. 5. Practicing how to make pocket, implant the generator, and suturing technique in the goat skin.

Address for correspondence: Yoga Yuniadi, M.D., Department of Cardiology and Vascular Medicine, Faculty of Medicine, University of Indonesia and National Cardiovascular Center Harapan Kita, Jakarta 11420, Indonesia; Email: yogayun@yahoo.com



Sardjito Hospital EP Center: The First EP Center Outside The Capital of Indonesia

Erika Maharani

Introduction

Electrophysiology study (EPS) is a widely-known method in diagnosing cardiac arrythmias. This procedure is frequently followed by Radiofrequency (RF) ablation as therapeutic method once abnormal heart rhythm is detected. In Indonesia, this method has not been routinely done since it requires specialized and comprehensive team led by an electrophysiologist, and has complex procedures. In addition to it, only several hospitals in Indonesia own appropriate Electrophysiology (EP) laboratory facilities. Although it is still developing, the current state dan outcomes show promising future.

The Special Region of Yogyakarta is a province of Indonesia, located in Java island, near the southern coast of Java. It is surrounded on three sides by Central Java province and with the Indian Ocean on the south side (Figure 1). It is subdivided into four regencies and one city, Yogyakarta, which takes place as its administrative capital city as well. The population at the 2010 census was 3,452,390 people, but according to the latest official estimation by the government in 2015, has risen to 3,594,290,

which is only 0.013% of Indonesia population estimation. It has an area of 3,133.15 km2, making it the second smallest area of the provinces in Indonesia, after Jakarta.



Figure 1. Yogyakarta in Indonesia Map

In Yogyakarta, Sardjito General Hospital has developed EP Center since February 2012, using Cardiotek System with EP Shuttle Stockert RF Generator. It is carried out by one electrophysiologist who is trained in diagnostic and treatment of a broad range of cardiac arrythmia conditions (Figure 2). EP Center Yogyakarta becomes a leading provider of diagnostic and individualized treatment option for cardiac arrythmias in Yogyakarta and Central Java.



Figure 2. EP laboratory in Sardjito General Hospital



Figure 3. EP Center Yogyakarta team

Procedure

We perform using standard equipment i.e, three quadripolar and one decapolar catheters to record electrocardiogram in the right atrium, right ventricle, bundle of his, and coronary sinus. Tachycardia usually could be induced easily using standard protocols, and additional Isoprenaline infusion will be administered when needed. Once diagnosis is confirmed, RF ablation is then performed using 4 mm or 8 mm catheter with energy range of 40-60 degree and 40-50 watt.

EPS Cases

EPS and RF ablation has been performed routinely since February 2012 with 193 cases recorded until July, 2016. The demographic characteristics of our EPS patients were 76 (39%) males and 117 (61%) females. From 193 recorded EP cases, 37 (19%) were EPS cases only and 158 (81%) cases were proceeded with RF ablation (Figure 4).

Over time, the number of cases of arrhythmia which are served in the EP Lab Sardjito Hospital has increased from year to year (Figure 5). This shows that the public (including colleagues of other doctors) began to find out that cardiac rhythm disorders not only can be treated with medication, but also with advance procedure, which are the EPS and ablation services.

EP Lab service performed in a hospital Sardjito is not only to correct heart rhythm disturbances,

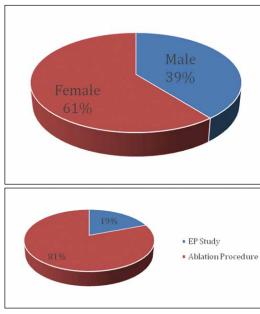


Figure 4. Figure 4. EP Case Characteristic (February 2012 – July 2016)

but also to detect the presence or absence of heart rhythm disturbances. Our team had done EPS with various cases, ranging from normal findings to complex arrythmias. Atrioventricular node reentry tachycardia (AVNRT) takes place as the most frequent case found in our EP Center, followed by atrioventricular reentry tachycardia (AVRT) (Figure 6).

The success rate of ablation in our EP Center is high (90%). It can be seen from the following data where among 193 patients who underwent ablation procedure, 141 patients have been successfully carried out without complications (Figure 7). One complication of cardiac tamponade was occured,



which was well-managed by pericardiocentesis, and the patient was discharged without any remarkable sequel.

Conclusion

EP Yogyakarta Center has become one of the first in terms of providing specialized medical facilities outside the Capital of Indonesia, namely the diagnostic approach to heart rhythm abnormalities and ablative therapies. EPS and RF ablation has become diagnostic tools and effective treatment modality for various cases of heart rhythm abnormalities with a high success rate. Currently, we are only performing simple arrhythmia cases partly because of limited tools and equipment. Contact time with patients is also limited, as there is no dedicated room for electrophysiology test. We perform the electrophysiology procedure once in a week, despite of the long waiting list of patients. In the next few years, it is expected that one dedicated room equipped with 3D electrophysiology system will be available.

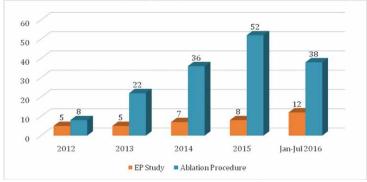


Figure 5. Number of EP Cases (February 2012 – July 2016)

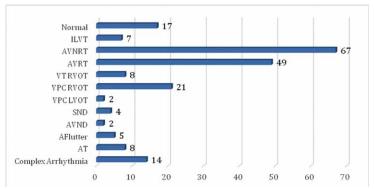


Figure 6. EP Cases that have been done in Sardjito Hospital (February 2012 – July 2016)

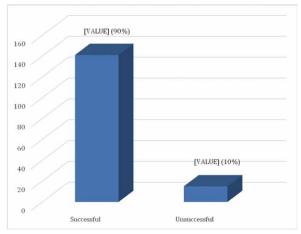
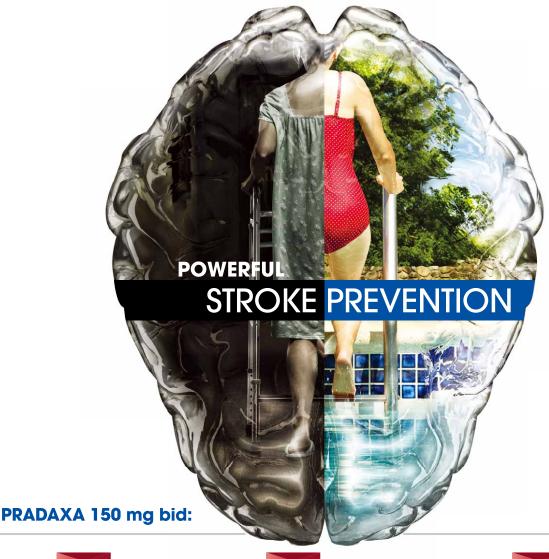


Figure 7. Ablation Procedure Succesful Rate (February 2012 – July 2016)

PRADAXA® THE ONLY ANTICOAGULANT

nonirolly

SHOWN TO BE SUPERIOR FOR BOTH ISCHEMIC AND HEMORRHAGIC STROKE RISK REDUCTION VS WELL-CONTROLLED WARFARININ NON-VALVULAR AF PATIENTS¹⁻³







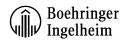


PRADAXA® (dabigatran etexilate) is indicated for the prevention of stroke and systemic embolism in adult patients with nonvalvular atrial fibrillation with one or more risk factors!

† Risk factors: previous stroke, transient ischemic attack, or systemic embolism (SEE); left ventricular ejection fraction < 40 %; symptomatic heart failure, ≥ New York Heart Association (NYHA) Class 2; age ≥ 75 years; age ≥ 65 years associated with one of the following: diabetes mellitus, coronary artery disease, or hypertension. ¹

Pradaxa® (dabigatran etexilate) is a prescription medicine. For complete information, please refer to the full prescribing information.

Reference: 1. Pradaxa® Prescribing information . 2. Connolly SJ et al. Dabigatran versus Warfarin in Patients with Atrial Fibrillation. N Engl J Med. 2009;1139-1151. 3. Connolly SJ et al. Newly Identified Events in the RE-LY Trial. N Engl J Med. 2010;363:1875-1876.







Be Ready to Enjoy the Most Unique Meeting of the Year!



The 9th Asia Pacific Heart Rhythm Society Scientific Session Preregistration Deadline 23 September 2016



Date 12 (Wed.) – 15(Sat.) October 2016

Venue COEX, Seoul, Republic of Korea

Website www.aphrs2016.com