



National Heart
Centre Singapore
SingHealth



PATIENTS. AT THE HEART OF ALL WE DO.

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MURMURS

AGE-
FRIENDLY
NEW
BUILDING



ACCENT
COLOURS AT
MAIN PATIENT
SERVICE AREAS
HELP ELDERLY
PATIENTS
FIND THEIR
WAY EASIER



NHCS TEAM
WINS BEST POSTER
AWARD FOR
BLOOD SUGAR
CONTROL
PROTOCOL

**Stroke prevention
in atrial fibrillation**

**Snapshots from the
ASEAN Federation of
Cardiology Congress 2012**

LEARNING
FROM TORONTO
GENERAL HOSPITAL

**NHCS nurses clinch
multiple awards
for outstanding
dedication and passion**

NHCS NEW BUILDING GOES AGE-FRIENDLY

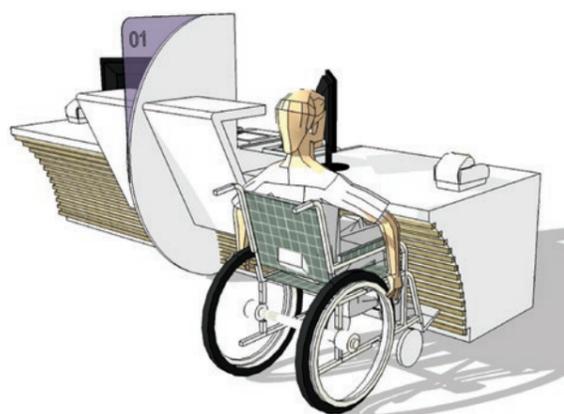
ELDERLY PATIENTS AND THEIR CAREGIVERS CAN LOOK FORWARD TO A MORE ELDERLY-FRIENDLY ENVIRONMENT

The National Heart Centre Singapore (NHCS) is gearing up for Singapore's greying population.

The NHCS new building, which will be ready by end 2013, will be integrated with various age-friendly features to better serve its growing number of elderly patients.

“Over the past decade, we have seen a 44 per cent increase in first-time heart outpatients aged 65 and above at NHCS. They form about one-third of our patient load. It is paramount for us to create an age-friendly environment that is safe, accessible, and comfortable to relieve our elderly patients of any anxiety that they may have,” said Mr Alson Goh, Chief Operating Officer, NHCS.

The age-friendly features in the NHCS new building are based on the key aspects of safety, accessibility, comfort, way-finding, and efficiency. The initiatives were put together based on the recommendations outlined in the Age Friendly Guidelines, which were co-developed by SingHealth Group Service Quality and Tsao Foundation. By enhancing its age-friendliness, NHCS aims to create a safe, warm and comfortable environment that supports the healing of heart patients.



Counters are recessed at the bottom for wheelchair users to be seated closer in, with a higher counter at the side for standing caregivers.



Colours like green and orange which are easy to spot by the elderly are used as accent colours to highlight main patient service areas. This facilitates way-finding which can be a stressor for the elderly.



BY 2030, 1 IN 5 SINGAPORE RESIDENTS WILL BE ABOVE 65 YEARS OLD.



Cantilever coupled with wall signs enhance visibility of room numbers and amenities when navigating the hallway.



Easy way-finding for the elderly

Creating an age-friendly environment minimises the physical and sensory challenges that the elderly patients face, enhancing their patient experience.

“We are mindful of the physical and sensory challenges that the elderly patients may face. For example, pink and blue can appear similar due to the yellowing of an elderly patient's eye lens,” said Ms Chia Puay Choo, Director, New Building Project, NHCS, “These challenges are important considerations when we design the NHCS new building. Our aim is to minimise such barriers to enhance the patient's experience at NHCS.”

Signages are kept simple and in big font size with contrasting colours. Specially designed cantilevers and wall signs are used for consultation rooms to give a three-dimensional view to help patients to proceed straight to their designated room, without having to figure their way around the numerous consultation rooms.

An alphabetical code will be printed beside department names to help the elderly better identify their destination. Wall directories will be kept to a 1.7-metre maximum height, taking into account the elderly's difficulties in lifting their heads.

Lighting is also kept consistent throughout the building as the elderly take a longer time for their eyes to adjust to different lighting conditions. Natural daylight is introduced at patient areas to provide a natural and calming setting.

Creating a safer environment

Floor finishes have been carefully chosen to avoid the use of dark colours, as the elderly tend to perceive dark spots on the ground as holes. Non-slip vinyl flooring is used in all patient areas as it is safe for elderly patients who tend to shuffle their feet while walking, compatible with wheelchairs, less reflective, and generates less noise. To prevent falls, the new building is designed with no steps and uneven ground surfaces at all patient areas.

Handrail support will be placed along corridors and to help the elderly move from place to place. The finishing will be in non-metallic material that is slip-resistant and not cold to the touch.

Seats in waiting areas will also be fitted with arm rests for ease in getting up. There will be new height-adjustable couches in the clinic consultation rooms to allow patients to get on and off them safely.

Seamless wheelchair accessibility

The entire building is designed to be wheelchair accessible, including special self-help kiosks at the main reception area which are set at a comfortable height for wheelchair users. Registration and payment counters are customised to the needs of wheelchair users and their caregivers. Partitions will also be built between counters to block out noise and provide patients with more privacy.

Motion sensor activated lights and automated doors are widely used to meet the needs of the elderly and wheelchair users who have difficulty reaching most switches which are positioned at a standard height.

Most wheelchair accessible washrooms will also have semi-automatic sliding doors, as opposed to conventional swing doors, to provide ease of access.

Putting staff in the shoes of the elderly

To complement the enhanced age-friendliness of the new building, staff members, especially the front-liners, are encouraged to attend the age-friendly workshop, where participants will experience the difficulties and frustration faced by elderly patients so that they can better empathise with them.



Dr Emi Kiyota (seated) sharing her expertise on age-friendly initiatives with the NHCS new building project team.

Bringing in the expert

NHCS has also invited respected environmental gerontologist Dr Emi Kiyota, President, Ibasho, to assess its new building's age-friendliness.

“NHCS has incorporated the age-friendly design principles to ensure safety, intuitive orientation, privacy, and comfort among the elderly patients,” said Dr Kiyota, “Examples include carefully thought-out room configurations that maximise the sense of privacy and reduce their walking distance, easy and highly legible signage for easy orientation, and age-friendly toilet designs with convenient access from waiting areas.”

ASEAN FEDERATION OF CARDIOLOGY CONGRESS 2012

AFTERWORD FROM THE ORGANISING COMMITTEE CHAIRMAN

As an established teaching hospital on cardiovascular medicine, National Heart Centre Singapore (NHCS) is privileged to lead the ASEAN Federation of Cardiology Congress (AFCC) 2012. Through the active participation of the delegates, the three-day congress – held from 13 to 15 July 2012 at the Raffles City Convention Centre – concluded with resounding success.

Delegates hailing from more than 45 countries in the Asia Pacific region, Europe, Middle East, and the Americas convened at this biennial congress, with this year's being the 19th in the series since the AFCC was first held in 1975 in Bali, Indonesia. Feedback from the 1,500 participants on the symposium and the pre-congress workshops has been very positive. According to the delegates, they found the presentations by invited speakers and poster submissions to be of a very high standard and relevance to both clinical and scientific interests. Those who participated in the moderated poster session also commented that it was a competitive and ultimately enriching experience. And as what most good international meetings have in common, AFCC 2012 presented an excellent networking platform for cardiologists and cardiothoracic surgeons from around the world.

The theme for this year's AFCC was Cardiovascular Care – Prevention to Perfection. The theme seeks to convey the importance of primary prevention strategies in significantly reducing the burden of heart disease on a country. While medical therapies and surgical treatments for heart problem have come a long way, cost remains a formidable barrier in the access to appropriate treatment for people in many parts of the region. Thus, AFCC 2012 placed a strong emphasis on the sharing of treatment strategies adapted by care givers and tailored to a country's specific population demographics and resources.

A closer look at cardiovascular care in ASEAN

Since the founding of the ASEAN Federation of Cardiology in 1973 as a non-political organisation aimed at improving the standard and practice of cardiology in the region, ASEAN countries have undergone exponential growth in the areas of economy, infrastructure, and healthcare. Despite their sprawling geography of diverse ethnic populations, cultures, languages, and stages of modernisation, ASEAN countries share a common denominator – a high prevalence of cardiovascular disease. In fact, urban development over the last three decades has led to heart disease outstripping infectious disease as the leading cause of death in the region. This can be attributed to a shift in diet from traditional foods to processed products which often are high in sodium and fat, as well as reduced physical activity due to the advent of more efficient, automated forms of transport.



Dr Kenny Sin (centre) and representatives from the various national cardiology societies in the ASEAN region.

Moving forward

Emulating the good work of other collective cardiac organisations such as the World Heart Federation, American Heart Association, and the European Society of Cardiology, it is the goal of the ASEAN Federation of Cardiology to have all ASEAN nations represented within the organisation beyond the current eight member nations. The Federation will not rest until it has achieved its mission of bringing the practice and delivery of cardiovascular medicine to the highest standard possible, and uniformly so across all cultures and ethnicity, for the benefit of the entire ASEAN population and beyond. With that, it is hoped that the journey from the spectrum of prevention to that of perfection can be achieved.

We look forward to meeting again at the next AFCC in Kuala Lumpur, Malaysia.

Dr Kenny SIN

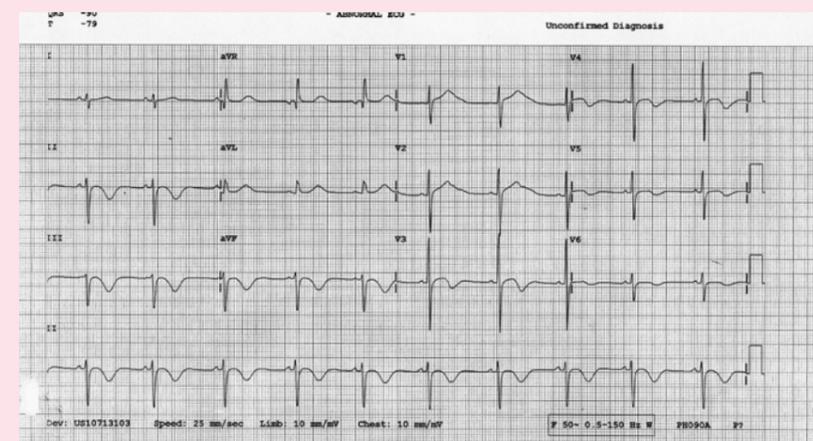
Chairman, Organising Committee
President, ASEAN Federation of Cardiology

ANALYSE THIS

A 16-year-old Chinese boy, independent in daily activities, presented with recurrent episodes of syncope/near syncope over the past two months. He described three episodes of definite syncope with total loss of consciousness that lasted for up to one minute and multiple other episodes of near syncope. Two of the syncopal episodes were witnessed by the patient's parents who described the patient suddenly falling to the ground without warning. There was some uprolling of the eyes and minimal jerking of the limbs, but no obvious convulsions, incontinence, or significant drowsiness

post episode. The patient's episodes of syncope occurred anytime and were not associated with posture. One of his syncopal episodes occurred whilst he was performing push-ups. There were no other obvious triggers. Prior to the syncope, the patient was asymptomatic except for mild chest discomfort and giddiness.

The patient was attending secondary school without any problems when his symptoms started. He had no past medical history or family history of note. He was not on any medications including traditional/herbal medications. Clinical examination of all systems, including cardiac, was normal.



WHAT ECG ABNORMALITY DID THIS PATIENT HAVE? Refer to page 10 for the answer.



Dr Amy Khor (right), Minister of State, Ministry of Health and Ministry of Manpower, and Dr Bernard Kwok (2nd from right), Director, Heart Failure Programme, NHCS.

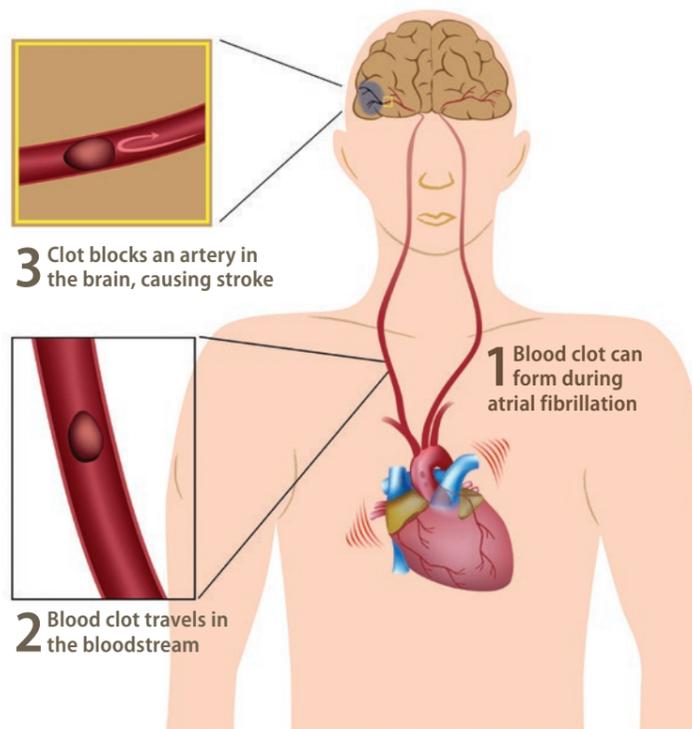


Day One of AFCC 2012.

STROKE PREVENTION IN ATRIAL FIBRILLATION

Atrial fibrillation (AF) is the most common sustained abnormality of the heart rhythm, and it affects between one and two per cent of the population. While the risk of developing AF is one in 1,000 below the age of 55, the likelihood increases to one in 10 for those above the age of 80. With an ageing population in Singapore, we are most likely to see more patients with AF in time to come.

Atrial Fibrillation and Stroke



Risk stratification for stroke	There are two common methods of estimating or stratifying the risk of stroke in AF patients. The first is the CHADS ₂ score, which comprises:	C Congestive heart failure/left ventricular dysfunction	1 point
		H Hypertension	1 point
		A Age ≥75 years	1 point
		D Diabetes	1 point
		S Stroke, TIA (transient ischaemic attack) or thrombo-embolism	2 points
	The second method is the CHA ₂ DS ₂ -VASc score, which is a newer validated version of the first and comprises:	C Congestive heart failure/left ventricular dysfunction	1 point
		H Hypertension	1 point
		A Age ≥75 years	2 points
		D Diabetes	1 point
		S Stroke, TIA or thrombo-embolism	2 points
		V Vascular disease	1 point
		A Age 65–74 years	1 point
		Sc Sex category female	1 point

	Risk of stroke		
	HIGH	INTERMEDIATE	LOW
CHADS₂	Score 2 to 6	Score 1	Score 0
CHA₂DS₂-VASc	Score 2 to 9: One 'major' risk factor (previous stroke, TIA or embolism, or age ≥75 years), or ≥2 'clinically relevant non-major' risk factors [heart failure/LVEF ≤40, hypertension, diabetes, vascular disease (myocardial infarction, peripheral artery disease or aortic plaque), female gender, age 65–74 years]	Score 1: One 'clinically relevant non-major' risk factor [heart failure/LVEF ≤40, hypertension, diabetes, vascular disease (myocardial infarction, peripheral artery disease or aortic plaque), female gender, age 65–74 years]	Score 0

Table of risk stratification schemes used to predict thrombo-embolism in atrial fibrillation. Adapted from Lip et al 2010.

Development and causes of AF

AF occurs when the atria go into a chaotic rhythm, instead of beating regularly and effectively. This results in an irregular pulse rate. As blood flow within the atria (especially in the left atrial appendage) is slow, blood clots may form and cause a stroke if it embolises to the brain.

Causes of AF can be traced to mitral stenosis, rheumatic heart disease, or mitral regurgitation. In Singapore, non-valvular AF is more common and can be seen in patients with hypertension, diabetes mellitus, ischaemic heart disease, and in lone AF. Secondary causes may be due to infection, myocardial ischaemia, and hyperthyroidism.



Effects of AF

AF is associated with increased rates of death, stroke and other thrombo-embolic events, heart failure and hospitalisations, reduced quality of life, reduced effort tolerance, and left ventricular dysfunction.

Mortality for patients with AF is doubled, and only antithrombotic therapy has been shown to reduce AF-related deaths.

Patients with AF are five times more likely to develop a stroke and they constitute approximately 15 per cent of stroke cases. The risk of stroke persists even in asymptomatic patients. Furthermore, AF-related strokes are more severe, cause greater disability, and have a worse outcome than strokes in people without AF.

In AF-related emergency hospital admissions, AF most often presents as difficulty in breathing, chest pain, and palpitations.

AF with rapid ventricular response causes symptoms and may lead to impaired left ventricular function. Some patients develop symptomatic bradycardia (slowing of the heart rate) and require a pacemaker implantation. Quality of life and effort tolerance are impaired in patients with AF.

New anticoagulants for stroke prevention in patients with AF

Patients at a low risk of stroke may be treated with aspirin. Aspirin reduces platelet aggregation and blood vessel constriction, and it is most effective in the prevention of blood clots that are rich in platelets, such as those that form in arteries. In patients with AF, aspirin, when compared with placebo, reduces the risk of all strokes by approximately 22 per cent. The reduction in risk for severe, disabling strokes is smaller (13 per cent).

Those at the intermediate risk level should receive oral anticoagulants. Warfarin (Vitamin K antagonist) inhibits the production of four vitamin K-dependent proteins that play key roles in the coagulation pathway. The management of patients receiving warfarin, however, can be challenging as warfarin has a narrow therapeutic window and significant drug and food interaction. Thus, frequent monitoring is required to achieve a stable INR (international normalised ratio) of 1.8 to 3. Clinical trials that directly compare aspirin with warfarin therapy in the prevention of stroke in AF patients have shown warfarin to be significantly superior, providing a risk reduction of approximately 50 per cent compared with aspirin.

Apart from warfarin, new anticoagulants such as dabigatran and rivaroxaban have been shown to be as effective as warfarin without the need for INR checks, and they have a wider therapeutic window and less drug-food interactions.



What can doctors do?

Primary physicians play an important role in the diagnosis and management of patients with AF. Screening ECGs in patients with palpitations or an irregular pulse can be done to increase detection and diagnosis of AF. Upon detection, the physician may seize the opportunity to identify co-morbidities, such as concomitant hypertension, diabetes mellitus or prior stroke/TIA (transient ischaemic attack). Stroke risk can be assessed clinically and the patient counselled accordingly.

The advent of new anticoagulants simplifies the whole process of therapeutic anti-coagulation. Patients at moderate to high risk of stroke should be encouraged to start anticoagulation for stroke prevention. Suitable patients can be identified and referred for non-pharmacological management of AF.

WINNING FORMULA

TEAM FROM CARDIOTHORACIC SURGERY INTENSIVE CARE UNIT (CTSICU) SNAGS PRESTIGIOUS AWARD FOR RIGOROUS BLOOD SUGAR PROTOCOL

A team from CTSICU at National Heart Centre Singapore (NHCS) received the Best Poster Award in the Nursing Category at the second SingHealth Duke-NUS Scientific Congress held from 3 to 4 August 2012 for successfully administering effective blood sugar management control protocols to open heart surgery patients. NHCS is the first centre in Singapore to have implemented such protocols.



THE NHCS TEAM BEHIND THE BLOOD SUGAR MANAGEMENT CONTROL PROTOCOLS

(From left) Mr Ismail Bin Mohamed Tahir Sheriff, Ms Tan Sin Yain, Ms Cing Suan Lian, Ms Xiao Li, Ms Dahliana Idris, and Dr Tan Teing Ee.

Benefits of the protocols

An evaluation study of 120 patients showed a 3.5 fold increase in the number of patients achieving an optimal blood sugar level (BSL) of between 4 to 8 mmol/L within 24 hours after surgery.

Ms Dahliana Idris, Advanced Practice Nurse (Intern), Nursing Development Unit, NHCS, elaborated, "We found that with the protocols in place, 70 per cent of our patients achieved optimal BSLs, and this has also resulted in reduced rates of wound infection and helped minimise hypoglycaemic events which can be very dangerous for patients."

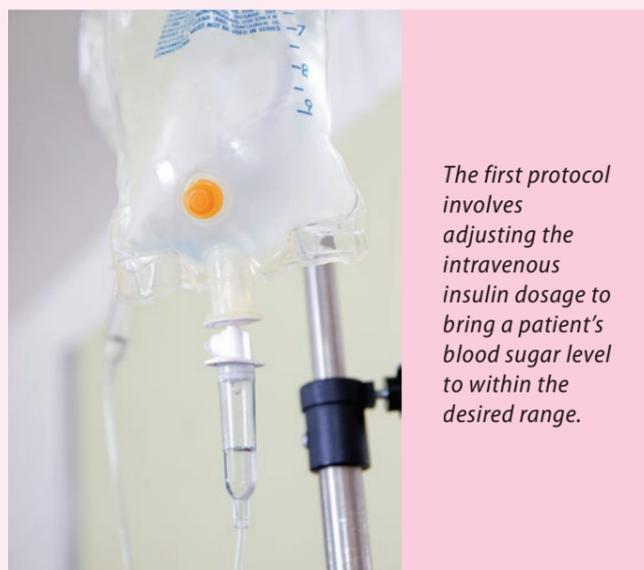
Another benefit derived from the protocols is shortened length of hospital stay.

"Our study showed that implementing the protocols has reduced the length of stay for majority of our patients from seven to six days," said Ms Cing Suan Lian, Senior Staff Nurse (Clinical), CTSICU, NHCS.

The protocols, which are followed through for patients regardless of their diabetic status, have contributed to helping post-surgical patients recover faster and reap cost-savings on hospital charges.

How they work

For patients who have just undergone heart surgery, poor blood sugar control can potentially disrupt their recovery process. High blood sugar, for example, inhibits the function of white blood cells and causes patients to be more prone to wound infection, which may lead to complications.



The first protocol involves adjusting the intravenous insulin dosage to bring a patient's blood sugar level to within the desired range.

In 2007, the CTSICU team at NHCS introduced the first blood sugar management control protocol which involves continuous intravenous insulin infusion (CIII) for patients in the CTSICU immediately after open heart surgery to achieve the target of 4 to 8mmol/L. This protocol worked well for patients transiting from the operating theatre to CTSICU, but problems arose once they are well enough to move to the general wards.

"Previously, we observed that the BSL of patients shot up after they moved to the general wards and started their oral diet. Thus we decided to establish the second protocol in 2009 where we develop a guide to assist the doctors with the transition from the CIII to patients' pre-operative diabetes therapy before patients are transferred to the general wards. The target was to achieve a level of less than 10mmol/L," said Dr Tan Teing Ee, Senior Consultant, Department of Cardiothoracic Surgery and Director, CTSICU, NHCS.

To ensure sustainability, Mr Ismail Bin Mohamed Tahir Sheriff, Senior Nurse Manager, CTSICU, NHCS, said, "We have in place continuous training and internal checks to make sure that all relevant staff comply with the protocols to ensure optimal care for our patients."

Patient compliance also plays a key role in the effective implementation of the protocols.



Once patients are out of the operating theatre, blood sugar level tests are performed manually by pricking a patient's finger.

"Patient compliance is always a challenge as it depends on whether they control their diet," said Ms Cing, "This is particularly important when well-meaning family members and friends bring patients their favourite foods and special treats to enjoy when they move from the intensive care unit to the general ward."

Nurses at CTSICU have thus integrated ongoing patient education to encourage patients to comply with the protocol. These patient education talks are conducted by nurses for both patients and their families, and they touch on areas such as the consequences of poor blood sugar control and diabetic care.

Nurses as researchers

The role of nursing has evolved beyond providing nursing care to the patients. Many nurses at NHCS are encouraged to participate in research to improve outcomes for the patients.

As nurses are in close contact with the patients, they see the breadth of experiences and are able to look comprehensively at the various factors – physiological, psychological, social, and emotional – that affect the outcomes. Their unique role provides specialised insights and discoveries that can translate to better care for the patients.

"Winning the Best Poster Award is a great encouragement to the team and we will continue our research efforts to benefit our patients," said Ms Cing.

RESEARCH HIGHLIGHT

Int J Cardiol. 2011 Aug 18;151(1):54-7. Epub 2010 Jun 8.

Emergency admissions in Asians with adult congenital heart disease

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Department of Cardiology, National Heart Centre Singapore, Singapore

ABSTRACT

BACKGROUND AND AIM: In the area of acute emergency care, the needs of adult congenital heart disease patients (ACHD) are unique and burden on hospital resources are likely substantial. We aim to understand the reasons for emergency admissions and associations of increased hospital length of stay (LOS).

METHODS: We evaluated 600 ACHD patients in our adult congenital database. Patients who required emergency admissions between January 2007 and December 2007 were studied from hospital records.

RESULTS: Sixty-eight ACHD patients (11%) required emergency admissions, culminating in a total of 108 admissions. Mean age was 37.6 years (SD 18.0), with a female preponderance (56%). Most were either schooling or working (62%) and were single (62%). Atrial septal defect (24%), ventricular septal defect (19%) and tetralogy of fallot (13%) formed the majority of diagnoses, mirroring proportions in our cohort. A third of the admissions were for cardiac reasons including arrhythmia, heart failure, endocarditis, and thrombo-embolism; the remaining two-thirds were for non-cardiac reasons. Median hospital LOS was 5.0 days. Those who were older ($p=0.02$) and neither employed nor schooling ($p=0.021$) had longer LOS. Thrombo-embolism accounted for longer LOS ($p=0.047$). One-third of the admissions that required interdisciplinary referrals had increased LOS ($p<0.001$), with utilisation of non-cardiac investigations ($p=0.002$). Increased LOS was not associated with adverse clinical outcome ($p=0.68$).

CONCLUSIONS: ACHD patients require emergency admissions for both cardiac and non-cardiac reasons. Older age groups, unemployment and thrombo-embolic complications were associated with increased LOS. Non-cardiac conditions required interdisciplinary resources and were associated with increased LOS. Understanding their diverse acute needs may potentially improve care and outcome for these patients.

For the full list of NHCS publications, please refer to www.nhcs.com.sg.



This research article has won Dr Angela Koh Su-Mei, Associate Consultant, Department of Cardiology, National Heart Centre Singapore (NHCS), this year's SingHealth Publish! Award for the Medical Research Publication (Cardiology) category. The award recognises the achievements of clinicians and researchers who have published quality research articles in internationally acclaimed and peer-reviewed scientific or medical journals.

ANALYSE THAT

Continued from page 5.

The main ECG abnormality is a prolonged QT. This was presented even after correction for heart rate.

Due to recurrent syncopal episodes suspicious of malignant arrhythmia, an implantable cardioverter defibrillator (ICD) was recommended. The patient and his parents took several weeks to consider, but with his recurrent symptoms, they decided to proceed with ICD implantation. Post-implantation, he had several episodes of syncope followed by shocks. In view of the VF, the ICD shock was appropriate and it probably saved his life. ICDs can reduce mortality in patients with prior VT/VF and selected patients with low ejection fraction.

REFLECTIONS IN ELECTROPHYSIOLOGY

Dr Ho Kah Leng, Consultant, Department of Cardiology, National Heart Centre Singapore, shares on her fellowship experience at Toronto General Hospital in Ontario, Canada.

Why Toronto General Hospital

Toronto General Hospital (TGH) is a well-known tertiary cardiac centre servicing the Greater Toronto Area. It is affiliated with The Hospital for Sick Children (SickKids) which has international reputation as a premier hospital for children with congenital birth defects, particularly cardiac conditions. The strong affiliation between TGH and SickKids has facilitated the transfer of patients' records to the Adult Congenital Unit at TGH once the patients reach adulthood. TGH is also known to have a very comprehensive heart failure programme and is one of the major hospitals in North America offering heart transplantation. The electrophysiology department at TGH itself has a robust Ventricular Tachycardia programme (named "Code VT") which, aside from serving patients in the Greater Toronto area, brings in patients from the underserved areas via airlift within 72 hours upon activating the code. The depth of expertise in the management of ventricular tachycardia was another stellar point in that programme.

The training focus

The invasive clinical electrophysiology fellowship training programme involved a weekly rotation of duties at the wards, operating theatre, electrophysiology laboratory, and in research work. As part of the programme, I was also required to do stay out calls for the department, particularly dealing with electrophysiology consults as well as interrogation of devices and treatment of arrhythmia through such devices.



Exterior of Toronto General Hospital (left) and Peter Munk Cardiac Centre.



Dr Ho (left, front) with her family on her day off in Toronto.

For my research project, I examined secondary data to explore the aspects during ventricular induction that may predict the electrophysiology anatomical site of the ventricular tachycardia circuit. I also had the privilege of spending two months in the biventricular programme actively implanting and troubleshooting biventricular devices.

What's next

My fellowship has allowed me to better appreciate the depth and breadth of complex electrophysiology cases. I believe this experience can be married with the technological advancement in the field of electrophysiology to establish NHCS as a major national and regional referral centre for the management of complex arrhythmias.

A SALUTE TO NHCS NURSES

Humble, dedicated, and conscientious. Those are the traits shared by our nurses who did NHCS proud by clinching multiple awards from July to September 2012.



The MOH Nurses' Merit Award is given out to nurses who have displayed consistent and outstanding performance and contributed to promoting a professional image of nursing. The recipients for this year's award are Ms Siti Fidiwati Binte Jasman (2nd from left), Senior Staff Nurse, Coronary Care Unit, NHCS, and Ms Tan Sin Yain (2nd from right), Nurse Clinician, Cardiothoracic Surgery Intensive Care Unit (CTSICU), NHCS. They have each received a medal to be worn as part of their nurses' uniform.



Ms Suriani Bte Zahari (3rd from left), Senior Staff Nurse, CTSICU, NHCS, and Ms Noorshinah Bte Noor (2nd from right), Principal Enrolled Nurse, Cardiac Clinics, NHCS, are the proud winners of the SingHealth-Lee Foundation-D.S. Lee Foundation Nursing Award 2012. The award represents the highest accolade in SingHealth that recognises nurses for their outstanding work performance, dedication, passion, and contribution to the community.



Ms Chua Lee Kheng, Nurse Educator, Nursing Development Unit, NHCS, receiving the Outstanding Young Educator (Nursing) Award from Minister for Health, Mr Gan Kim Yong, at the SingHealth Academy Duke-NUS Golden Apple Awards 2012. The award is given to educators below the age of 40 who

demonstrate dedication and commitment to excellence in educating the next generation of healthcare professionals.



Congratulations to Ms Belinda Wong (front row, centre), Senior Staff Nurse, Coronary Care Unit, NHCS, for being voted as one of the Best Mentors on SGH Campus! The awards were presented on 14 September 2012 to our remarkable educators and mentors for nurturing and guiding us to always strive for better patient care.



APPOINTMENT WITH NUS YONG LOO LIN SCHOOL OF MEDICINE

A/PROF CHUA YEOW LENG
Adjunct Associate Professor
Department of Anatomy



PROMOTION

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