FEWER VISITS TO ARRIVE AT DIAGNOSIS FOR POLYCLINIC REFERRALS

"SILENT" GENE MUTATIONS MAY CAUSE HEART FAILURE IN HEALTHY PEOPLE

RESEARCHERS TO DEVELOP NEW PROTOCOL FOR EXERCISE MAGNETIC RESONANCE IMAGING TEST FOR ENLARGED HEARTS

OPEN ACCESS PROTOCOL

FRONT LOADING INITIATIVE

NHCS STAFF SHINE BRIGHT, SCORE HIGH AT SHQSA 2017

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FEWER VISITS TO ARRIVE AT DIAGNOSIS FOR POLYCLINIC REFERRALS

NHCS partners with SingHealth Polyclinics to reduce one visit for referred patients and allow Polyclinic doctors to directly order cardiac diagnostic tests.

National Heart Centre Singapore (NHCS) sees about 5,000 referrals from SingHealth Polyclinics (SHPs) every year and chest pain is the top indication for the referrals, which accounted for about 30% of all referrals. Analysis into these new cases referrals however, revealed that 70% of the referrals had no significant cardiac abnormalities.

Previously, patients referred by polyclinics will visit NHCS for initial assessment and undergo cardiac diagnostic test during the second visit, before finally getting their test results and possible diagnosis at the third visit. The whole process may take several months. With the streamlined procedures, the whole process is shortened to just slightly over a month for the referred patients.

Front loading initiative leverages on a team of NHCS nursing and medical staff to review referral letters and electrocardiograms (ECGs) of the targeted group of patients before ordering diagnostic tests to be done prior to patients’ first consultation visit at NHCS. With the diagnostic tests front loaded, referred patients can then discuss and receive their diagnosis at the first visit with the specialist. The front loading initiative has since been rolled out to all nine SHPs.

In a similar pilot scheme, an open access protocol is being progressively implemented across the polyclinics to allow doctors to order cardiac diagnostic tests directly at NHCS. Diagnostic tests will be ordered for suitable patients based on a set of algorithms pre-established by NHCS. The open access protocol has since been carried out across four SHPs – Outram, Bukit Merah, Marine Parade and Sengkang, and there are plans to extend the scheme to more polyclinics.

Compared to the conventional referral process, both the front loading initiative and open access protocol not only help patients reduce one consultation visit and receive faster diagnosis, patients with normal test results can even be discharged sooner, and transferred to their primary physician for follow-up. Patients with normal test results under the open access protocol will be followed up directly at the polyclinics, without needing to go through the specialist consultation. These streamlined processes ultimately free up valuable consultation slots for chronic or more severe cases, optimising resources, offering patients a smoother and hassle-free experience, promoting right site of care.
EMPOWER WOMEN TO FIGHT AGAINST HEART DISEASE

NHCS officially opened its Women’s Heart Clinic to lead women in the fight against cardiovascular disease (heart disease & stroke) – the number one killer among Singaporean women.

“We wanted to cater to the biological, physiological and psychological needs of our women patients which are different from men. Women are more likely to ignore symptoms, inaccurately assess their own personal risks of heart disease and delay seeking medical treatment. Knowing all of this, we have chosen to put women’s needs at the ‘heart’ of our services and empower more women to take charge of their own heart health. Our clinic will guide and reassure them on their health journey,” said Professor Carolyn Lam, Senior Consultant, Department of Cardiology, NHCS, also currently the cardiologist running the clinic.

The Women’s Heart Clinic at National Heart Centre Singapore (NHCS) aims to empower women to take charge of their heart health through greater awareness of their risk factors and symptoms. The clinic offers end-to-end services, from prevention to diagnosis, treatment and rehabilitation, customised to the specific needs of women. It will also serve as a knowledge centre, providing specialised training for medical students and doctors in Singapore and the region. The end goal is for patients to be identified early and receive appropriate treatment, and to prevent disease in others at risk, thus ensuring better outcomes for all women with, or at risk of, cardiovascular disease.

Research found that heart disease is deadlier in women, often undiagnosed or undertreated. Women tend to also be much older and have a higher risk of dying than men, when they suffer heart attacks.

One in three women

Yet, most Singaporean women are not aware that it is the leading cause of death, according to a survey done by Singapore Heart Foundation last year.

GENDER MATTERS

Heart disease affects both men and women but some unique factors and symptoms will explain why gender differences matter and how women are more susceptible to poor outcomes following heart attacks.

SYMPTOMS

While both men and women share most of the common symptoms of heart disease, women are more likely to exhibit atypical symptoms such as shortness of breath; nausea and vomiting; back, neck or jaw pain; and fatigue. These symptoms tend to be ignored or excused by women, leading to delayed diagnosis and treatment.

MECHANISMS

Heart attacks are caused by interruption of blood supply to the heart muscle. This is usually caused by obstruction of the main blood vessels (coronary arteries) of the heart by fatty deposits (atheroma) or blood clots. However, women may still suffer heart attacks even without obstructions in their main coronary arteries, because of disease in the smaller arteries (microvascular disease) or lining of the arterial wall (endothelial dysfunction, coronary dissection).

OTHER TYPES OF HEART DISEASE AFFECTING WOMEN

Women are uniquely predisposed to certain types of heart disease such as heart failure with preserved ejection fraction (also called diastolic heart failure), stress-induced cardiomyopathy (popularly known as ‘broken heart syndrome’) and pregnancy-related heart failure. Specialised tests may be needed to make these diagnoses.

PREVENTION IS STILL THE KEY

Prevention is still better than cure and keeping a healthy lifestyle cuts risks of getting a heart attack.

Some tips for a healthy heart:

- Don’t smoke.
- Exercise for at least 30 minutes, five times a week, at moderate levels.
- Check your blood pressure, cholesterol and sugar levels yearly. If you have high blood pressure, high cholesterol or diabetes, take your medications and keep these conditions under control.
- Eat healthily by aiming for a more plant-based rather than an animal-based diet. Cut down on refined sugars, salt and saturated fat.
- Pick up relaxation techniques (e.g. meditation, breathing exercises and yoga).
- Think positively to support a healthy mind.

The Singapore Health Quality Service Awards (SHQSA) 2017 ceremony took place on 17 January 2017 at University Cultural Centre and saw 3,585 winners from across 26 public and private healthcare institutions, community hospitals and agencies bagging home the coveted service quality awards. SHQSA was organised by the SingHealth Duke-NUS Academic Medical Centre since 2011, to honour healthcare professionals who have delivered exemplary quality care and service to patients.

National Heart Centre Singapore (NHCS) walked away with 197 award winners in the Star, Gold and Silver categories this year. For the first time in history, NHCS produced two Superstar winners, and on top of that a Special Mention Award this year. For the first time in history, NHCS produced two Superstar winners in the Star, Gold and Silver categories. NHCS has been delivering exemplary quality care and service to patients since 2011.

SHQSA 2017 NHCS AWARD WINNERS

**2 SUPERSTAR Awards**

**19 STAR Awards**

**53 GOLD Awards**

**123 SILVER Awards**

**1 SPECIAL MENTION Award**

Two superstar winners and a total of 197 staff recognised for their exemplary service

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**SUPERSTAR AWARD WINNERS**

**SEN Kamimah Binti Hussien, Ward 56, NHCS - Superstar Award recipient for the Nursing Category.**

"Try to put yourself in the shoes of the patient. There is always a reason behind every action.”

– SEN KAMIMAH BINTI HUSSIEN

"She is a person to confide your problems with. Kamimah displays motherhood love and shower you with care. Her love shown to patients is remarkable! I am grateful to her.”

– IVAN LIM (PATIENT) ON KAMIMAH

**SPSO Norzana Bte Ayub, Cardiac Clinic, NHCS - Superstar Award recipient for the Ancillary Category.**

"I always share with my colleagues that we should really learn to listen to our patients. It is important to understand their needs and help as best as we can.”

– SPSO NORZANA BTE AYUB

"She is the best counter staff I have come across. Very courteous and very helpful in everything I ask. We need more service staff like her. Thank you.”

– K. VISWANATHAN (PATIENT) ON NORZANA

**SAY GOODBYE TO PAINFUL ADHESIVE BANDAGE REMOVAL**

Hearts Team won the SHQSA Special Mention Award for making the removal of adhesive bandage a painless process

Adhesive bandage dressing is commonly used on patients where pressure is applied to stop bleeding, after cardiac procedures and invasive lines insertion. Due to the strong adhesiveness, however, patients may experience skin tear during the bandage removal, especially for the elderly with delicate skin. As a result, some patients had to put up with pain during the removal and some had to extend their hospital stay to treat the wound caused by the skin tear.

Determined to find a way to make the adhesive bandage removal a less painful process for patients, the Hearts team tried out many different methods, before finding a solution that is painless, easy and of low-cost. The team was surprised that a simple and yet effective solution, that is, using olive oil, was the answer to alleviating the painful adhesive bandage removal experience. They then quickly developed a set of guidelines to remove adhesive bandages with olive oil.

The improved bandage removal process was progressively implemented to the wards and after just one month, the team achieved the remarkable result of reducing the number of patient stays due to serious skin tears to zero. The patients welcomed the improved process and nurses no longer had to face patients’ frustrations over the old painful way of bandage removal. The team was delighted by the encouraging feedback but nothing rewards them as much as patients’ satisfying experience and the significant improvement to patient care.

The HSACS HEARTS Team (from the top left, clockwise): ANC Koh Hwee Hong, Ward 44; Jacqueline Huo, Operations; SSN Anne Lee, Ward 44; NC Lan Mei Ling, Ward 44 (Leader); NC Wirdawati Binte Salimin, CTICU; NC Belinda Wong, Ward 47B (Co-leader); SNM Jasmine Lee, Ward 44 (Facilitator). The NHCS HEARTS Team (from the top left, clockwise): ANC Koh Hwee Hong, Ward 44; Jacqueline Huo, Operations; SSN Anne Lee, Ward 44; NC Lan Mei Ling, Ward 44 (Leader); NC Wirdawati Binte Salimin, CTICU; NC Belinda Wong, Ward 47B (Co-leader); SNM Jasmine Lee, Ward 44 (Facilitator).
Study revealed that gene mutations in a protein called titin would potentially trigger heart failure in one percent of healthy individuals worldwide.

The multinational study, led by National Heart Centre Singapore (NHCS) involved over 2,490 dilated cardiomyopathy patients and 1,400 healthy volunteers, discovered that gene mutations previously thought to affect only patients with dilated cardiomyopathy could actually affect the heart function of even the healthy individuals.

In the study, researchers generated two rat models to understand the impact of the titin gene mutations at the molecular level and heart function; conducted cardiac gene sequencing tests on patients with dilated cardiomyopathy; and performed 3D cardiac magnetic resonance imaging (MRI) on healthy volunteers. Results from these tests showed that those carrying the gene mutations were found to have an enlarged heart, in a pattern similar to that seen in heart failure patients. The enlarged heart, although functioning in a compensated state because of the stress caused by the gene mutations, would still be working fine, until it encounters additional stressors that may cause the heart to fail.

Currently, one percent of the world’s population carry these gene mutations and since it is now known that these “silent” gene changes can adversely affect the heart, it is crucial to find out next what these additional stressors are that may put certain people with titin mutations at risk of heart failure.

Researchers at NHCS studied a group of athletes and healthy volunteers using the CMR compatible cycle ergometer and real-time CMR to evaluate the feasibility and reproducibility of the exercise protocol and examine its potential to differentiate athletes from healthy volunteers. Participants were asked to cycle at an initial workload of 25W followed by 25 W-increment every minute until exhaustion. Free-breathing imaging was performed at the end of every stage during a brief period of stopping exercise. A repeat scan using the same exercise protocol was then performed on some individuals, at least seven days from the first scan, to assess scan-rescan reproducibility.

The greatest advantage of the ExCMR imaging test is that it allows cardiologists to use one imaging modality to study the function of the heart, and its responses to exercise, and stress in addition to the characteristics of the heart muscles. Patients no longer have to undergo two tests in order to achieve the same results.

The Tanoto Foundation, National Medical Research Council Singapore, SingHealth Duke-NUS Institute of Precision Medicine, Medical Research Council Clinical Sciences Centre UK, NHRI Biomedical Research Unit in Cardiovascular Disease at Royal Brompton & Harefield NHS Foundation Trust, and Imperial College London and British Heart Foundation UK, among others, funded the work.

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Dr Pang Yi Kit, Philip Associate, Department of Cardiovascular Surgery, National Heart Centre Singapore (NHCS), came back from a one-year Advanced Fellowship Training Programme in Cardiovascular Surgery just last year. He opened up to us on his valuable learning experience at Yale-New Haven Hospital and how the exposure broadened his horizons.

September 2017

WHAT WAS THE TRAINING LIKE AT YALE-NEW HAVEN HOSPITAL?

For my one-year fellowship in adult cardiac surgery at Yale University and Yale-New Haven Hospital, I was divided into two main rotations, the first focusing on valvular heart disease, and the second on thoracic aortic disease. A significant proportion of patients referred to Yale University were from other tertiary centres across the USA, where they were initially deemed inoperable. I had the privilege of participating in more than 120 aortic valve surgeries under the mentorship of Dr John Eleftheriades. My responsibilities included the operative and periparative management of patients undergoing minimally invasive valve surgery, reimplantation, and complex thoracic reconstructive surgery.

A typical day at Yale started at 6am and ended at 10pm. I was fortunate to be in the operating room every working day. We generally operated two days and the third day was an off day. We came back from a one-year Advanced Cardiac Surgery fellowship. The first day focused on valvular heart disease, and the second day focused on thoracic aortic disease. A significant proportion of patients referred to Yale University were from other tertiary centers across the USA, where they were initially deemed inoperable. I had the privilege of participating in more than 120 aortic valve surgeries under the mentorship of Dr John Eleftheriades. My responsibilities included the operative and periparative management of patients undergoing minimally invasive valve surgery, reimplantation, and complex thoracic reconstructive surgery.

WHAT WAS YOUR EXPERIENCE LIKE HELPED YOU?

The experience gained from my fellowship at Yale has broadened my horizons and increased my confidence in dealing with complex valvular and thoracic aortic disease. A significant proportion of patients referred to Yale University were from other tertiary centers across the USA, where they were initially deemed inoperable. I had the privilege of participating in more than 120 aortic valve surgeries under the mentorship of Dr John Eleftheriades. My responsibilities included the operative and periparative management of patients undergoing minimally invasive valve surgery, reimplantation, and complex thoracic reconstructive surgery.

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WHAT WERE THE MOST MEMORABLE MOMENTS?

My most memorable moments were in the operating room. There were several cases that stood out in my memory. The first was a high-risk, complex, descending thoracic aortic surgery with Dr Eleftheriades. I was responsible for extricating a thoracic endovascular stent which was densely embedded in the aorta, during a crucial period without circulatory support. This rather dramatic sequence was presented at the Society of Thoracic Surgeons meeting earlier this year. During my time with Dr Hashim, I encountered an extremely rare complication of acute aortic dissection failure during minimally invasive valve replacement. This required reensitization of cardiopulmonary bypass and replacement with a tubular valve from a different manufacturer. I was very impressed by Dr Hashim’s calm demeanour and handling of this rare but serious event. In keeping with the high volume of minimally invasive valve replacement at Yale, we experienced the same complication several weeks later on a different patient. This preceded a nationwide recall of this particular bioprosthetic valve. We have since published our experience in the Journal of the American College of Cardiology.
NHCS HEART CARE SYMPOSIUM — HEART FAILURE

This symposium targets mainly General Practitioners and Doctors with an interest in cardiology. Through this Symposium, participants will be able to understand more about Heart Failure; as well as learn how to manage the co-morbidities in Heart Failure. An update on the pharmacological therapy and use of devices in heart failure would be shared at the Symposium as well.

Date: 27 May 2017, Saturday
Time: 1pm – 4.30pm
Venue: Lecture Theatre, Level 7, National Heart Centre Singapore 5 Hospital Drive, Singapore 169609

Free admission, Limited seating, pre-registration required. Registration closing date: 19 May 2017.

For enquiries, please call 6704 2381/2389 or email nhccme@nhcs.com.sg.

5TH CORONARY CARE SYMPOSIUM

Designed for residents, fellows, medical students and nurses, this is a basic course in coronary intensive care covering the management of cardiac patients and basic equipment and modalities used in the CCU. Interactive case discussions/quizzes will cover the crucial topics in a stimulating and fun way while hands-on stations will support in-depth learning of the various tools and techniques essential to the daily CCU work.

Date: 9 September 2017, Saturday
Venue: National Heart Centre Singapore 5 Hospital Drive, Singapore 169609

Registration Fees:
For Physicians’ Track
• S$50 for medical students;
• S$200 for physicians / doctors-in-training
For Nurses’ Track (Nurses / Allied Health Professionals)
• S$80 for afternoon programme;
• S$110 for full day programme

Registration closing date: 25 August 2017.
For enquiries, please call 6704 2389/2382 or email nhccme@nhcs.com.sg.

APPOINTMENTS AND PROMOTIONS

APPOINTMENTS WITH DUKE-NUS MEDICAL SCHOOL

Join us!