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**MEDIA RELEASE**

## **FOR IMMEDIATE RELEASE**

### **16<sup>th</sup> Singapore Live Interventions in Vascular Endotherapy (LIVE)**

Singapore LIVE, Singapore's pioneering cardiology meeting ushers into its 16th year with the meeting focusing on the state-of-the-art imaging techniques, research findings, latest trends and techniques in interventional vascular medicine. There are also live transmissions from the catheterization labs from National Heart Centre Singapore, Singapore General Hospital, Japan and India to Suntec Singapore, where around 1000 delegates from around the world will gather to watch world-renowned cardiologists and radiologists performing complex interventions.

Held from 20 – 24 January 2007, the highlights of this year's meeting include:-

#### **1) Long Term Safety of Drug Eluting Stents (DES)**

With the recent groundswell of concern about rare but potentially fatal blood clots (late stent thrombosis) in heart patients who have received DES to open clogged arteries, this topic continues to be one of the key focuses for 16<sup>th</sup> SLIVE.

Coronary balloon angioplasty was introduced in 1979 and has become a popular treatment strategy for coronary artery disease (CAD). However, it was plagued with complications like abrupt vessel closure, which requires emergency coronary artery bypass grafting (CABG), and high restenosis rate as high as 40%.

Bare metal stenting (BMS) was introduced in 1987 to solve the problem of abrupt vessel closure and almost eliminated the need for emergency CABG during balloon angioplasty. BMS was later also found to reduce the restenosis rate to between 20-30%. In patients with complex lesions (long lesions, small vessels and chronic total occlusions) and diabetes mellitus, the in-stent restenosis (ISR) rate can reach 50%, therefore restricting the application of percutaneous coronary intervention to a wider population with CAD. Animal and human investigations had identified smooth muscle

cells (SMC) proliferation and neointimal hyperplasia, which occur in response to vessel injury induced by stent implantation, as the major contributors to ISR.

To solve this iatrogenic problem, DES was ushered onto the stage of interventional cardiology with great enthusiasm. Coated with a polymer containing an anti-proliferative agent, the release of the drug into the vessel wall can be controlled and thereby stopping the smooth muscle cells proliferation at critical point of vessel healing. This was thought to be the perfect solution to prevent ISR.

Indeed, the results of initial randomized studies were astoundingly in favor of polymer based DES. The ISR rate of DES was reduced to less than 10%. There was a craze when DES became commercially available with every patients wanting DES. In United States, DES implantation has become the standard of care for PCI after FDA approved it.

Having been available for 3 years, the problems associated with DES have surfaced. The main problem: late stent thrombosis.

After BMS implantation, the endothelium will grow over the stent struts and within 2 weeks completely cover the stent. Thrombosis tend to occur before the stent was fully endothelialised and that is the rationale of dual anti-platelet therapy of aspirin and clopidogrel to prevent stent thrombosis during this vulnerable period. The usual recommendation of dual anti-platelet is for 2 to 4 weeks after BMS implantation to prevent stent thrombosis. Thrombosis of BMS after 30 days is extremely rare.

In DES implantation, the usual recommendation was 3 to 6 months as delay of vessel healing is anticipated because of the action of the antiproliferative agents. However, in some patients the antiproliferative agents are so effective that normal endothelialisation of the stent is prevented, resulting in persistent exposure of the naked stent to the blood with potential risk of stent thrombosis.

The incidence of stent thrombosis was no worse than BMS in randomized trials comparing DES and BMS up to 1 year, at a rate of less than 1%. However, case reports of late stent thrombosis long after DES implantation are accumulating in the literature over the last few years, especially associated with stopping one or both of the dual anti-platelet therapy. Interventionists with high workload would certainly have experienced a few cases of late stent thrombosis in their practice.

Professor Patrick Serruys, a renowned cardiologist from Netherlands and also our keynote speaker, will provide an overview of the results of the related studies pertaining to this issue and crystal-gaze into the future of DES.

National Heart Centre uses 500-600 DES in 2004 and 2005. Its Medical Director, A/Prof Koh Tian Hai, also the course director of 16<sup>th</sup> Singapore LIVE will be sharing the NHC's experience using DES, recommendations of the suitability of patients for DES implantations, advice on the antiplatelet therapy and consequences of non-compliance.

## **2) Singapore General Hospital - First in South East Asia to install Dual-Source Computed Tomography**

A new benchmark for medical imaging, dual-source computed tomography (DSCT) is the first of its kind in the world. DSCT incorporates two independent X-ray sources and two sets of detectors at right angles to each other. This is considered a new breakthrough in CT technology, as other current CT scanners are single source systems only.

Newly installed at the Singhealth Centre for Advanced Non-invasive Cardio-Vascular Imaging (SCAN CVI) in the Department of Diagnostic Radiology of Singapore General Hospital, this latest innovation in CT technology is now available to patients of Singapore General Hospital and National Heart Centre. This DSCT system in SGH is the very first installation in South East Asia and one of select few in the world.

DSCT is able to capture data of moving organs twice as fast as any existing multi-slice CT technology, delivering motion-free cardiac images independent of the patient's heart rate with its unique 83msec (hardware based) temporal resolution. Thus, the usage of medication (beta blockers) to slow down the heart rate of the patient becomes obsolete, speeding up the workflow of the examination significantly and eliminating the risk of complications from this medication. This new technology also enables patients previously rejected for cardiac CT scanning (due to present contraindications such as asthma or chronic bronchitis) to undergo this non-invasive scan.

Utilizing its unique dose saving algorithms, this DSCT scanner can provide better image quality with 50-70% less radiation dose compared to current 64-slice CT technology, thus reducing radiation exposure to patients.

The new DSCT also has unique capabilities for imaging with two X-ray energies simultaneously, described as dual energy scanning. The initial results obtained from renowned centers worldwide utilizing this technique are promising and may lead to new breakthroughs in clinical research and potential innovations in CT contrast media. It may also allow radiologists to better differentiate, characterize, isolate and distinguish tissues and lesions.

As part of the 16<sup>th</sup> Singapore LIVE 2007, a live demonstration of this DSCT scanner will be performed on Monday January 22<sup>nd</sup> 2007 at the Department of Diagnostic Radiology, Singapore General Hospital.

## **3) Vascular Intervention Simulator Training**

At every level of patient care, hands-on is the best teacher. During a coronary angiography, doctors are required to insert a catheter into the artery in the groin and guide through the blood vessels to the heart. To become more proficient with this procedure, interventional trainees now can try their hands on a 'virtual patient' first

before proceeding to carrying out the procedures on real patients. This simulator training allows the trainee doctors to minimise adverse events such as arteries perforation for the patients. Interventional trainees attending the 16SLIVE will have the opportunities to be guided by the gurus in interventional cardiology and try out the simulators specially brought in for the meeting.

Said A/Prof Koh Tian Hai, Course Director and Medical Director of the National Heart Centre: "As always, this year's Singapore LIVE will feature many world-class international teaching masters. In addition, our extensive number of key opinion leaders from the Asian-Pacific region will champion the Asian perspective and practice of coronary and vascular interventions. It is our hope to constantly be on the leading edge of medical science, and to hold up-to-date programmes, and provide a truly educational experience to our delegates right here in the heart of Asia."

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