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9th Asian Preventive Cardiology and Cardiac Rehabilitation Conference  
Symposia

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# 9th Asian Preventive Cardiology and Cardiac Rehabilitation Conference



## 9TH ASIAN PREVENTIVE CARDIOLOGY AND CARDIAC REHABILITATION CONFERENCE

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### Symposium 1-Cardiovascular Risk Factors Symposium I 1. Treatment of drug-refractory hypertension by renal denervation

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Hypertension is an important cardiovascular risk factor and one of the commonest chronic diseases in Hong Kong. Uncontrolled hypertension can lead to stroke, myocardial infarction, heart failure, peripheral artery disease, end-stage renal disease and premature death.

Patient with uncontrolled hypertension may suffer from Resistant Hypertension. It is defined as the failure to achieve BP 'control' to levels below 140/90 mm Hg despite treatment with three antihypertensive medications with complementary mechanisms of action (with at least one diuretic). The diagnosis of resistant hypertension requires assurance of antihypertensive medication adherence, excluding the "white-coat effect" and any secondary cause of hypertension.

The talk focuses on the introduction of renal denervation, which is a catheter-based treatment for resistant hypertension. It also covers the latest results of clinical trials, its antihypertensive mechanism, and how it can be incorporated into hypertension treatment strategies.

### Symposium 1-Cardiovascular Risk Factors Symposium I 2. Dosing Strategy of Non-Vitamin K Antagonist Oral Anticoagulants in stroke prevention in atrial fibrillation

Chao Tze-Fan

*National Yang-Ming University, Chinese Taipei*

Atrial fibrillation (AF) is associated with a 3-5 fold higher risk of ischemic stroke, and therefore, stroke prevention with oral anticoagulants (OACs) is central to the management of patients with AF. Non-vitamin K antagonist OACs (NOACs) have emerged as the preferred anticoagulant option for stroke prevention in AF (SPAF) in the last decade. Since routine monitoring of drug concentration is not necessary for NOACs, the selection of appropriate dose of NOACs according to the dosage criteria defined in randomized controlled trials (RCT) or labelling is very important. However, prescriptions of off-label dosing NOACs remained as a major problem in the daily practice.

Several factors, such as old age, chronic kidney disease and prior history of bleeding, would impact on clinical physicians' choices of certain dosing of NOACs. Since the Asian population is associated with a higher bleeding risk such as intracranial hemorrhage, physicians generally tend to prescribe low-dose NOACs for Asian AF patients in the clinical practice. In this lecture, we will discuss the complementary data from RCT and real-world evidence that support NOAC treatment in AF patients. Also, we will discuss data regarding the associations between dosing of NOACs and clinical outcomes, and emphasize the importance of on-labelling dosing NOACs in SPAF.

### Symposium 2 - Hong Kong Heart Foundation Symposium 3. Cardiac rehabilitation around the world during COVID pandemic

Sherry Grace

*York University, Canada*

The (1) early and (2) late impacts of COVID-19 on CR delivery around the globe, including effects on providers and patients, as well as (3) implications and recommendations for delivery in the current peri-COVID era will be described. Through a cross-sectional study, a piloted survey was administered to CR programs globally early in the pandemic. The 50 members of the International Council of Cardiovascular Prevention and Rehabilitation (ICCP) facilitated program identification. Given known availability of CR, results suggest that approximately 4400 programs would have ceased service delivery globally. Alternative models were delivered in 40% of programs, primarily through low-tech modes (19%). 30% of respondents were re-deployed, and 37% felt the need to work due to fear of losing their job. 23% reported anxiety, 20% were concerned about exposing their family, 10% reported increased workload to transition to remote delivery, and 9% were juggling caregiving responsibilities.

Data from cardiac patients suggests the COVID waves are impacting their psychosocial well-being, and many have experienced major life stressors. In terms of heart-health behavior, there has been less exercise due to confinement, with associated weight gain, as well as increased substance use. Patients are avoiding preventive care visits and are having difficulty refilling prescriptions. This has resulted in worsening cardiac symptoms and risk factors, while at the same time these patients are often now needing to pay for remote CR as it is not reimbursed.

In the current era, we need to better understand the number of operating programs, through a repeat of ICCPR's Global Audit. We do know that programs that remain open are implementing new technologies to ensure their patients receive CR safely, despite the challenges such as access, digital literacy, cost, connectivity, and engagement. Safety protocols for remote exercise have been tried. Indeed, home-based CR is shown to be as safe and effective as centre-based.

### Symposium 3 - Heart Failure Symposium I 4. Clinical Implications of SGLT2i in Heart Failure Across the Spectrum of LVEF

Ruldolf De Boer

*University Medical Center Groningen, Netherlands*

Treatments for heart failure with reduced ejection fraction (HFrEF) are well established with robust data and clinical guideline recommendations. However, effective treatments beyond HFrEF are very limited with a lack of guideline recommendations on therapies that can demonstrate clinical benefit in patients with heart failure with mildly reduced (HFmrEF) or preserved ejection fraction (HFpEF). Recently, the

Table 1. Cardiopulmonary exercise testing parameters in HFREF patients.

CPET variable	Treadmill	Cycle	P value*
Peak VO <sub>2</sub> , ml/min	1549 ± 436	1252 ± 345	<0.001
Peak VCO <sub>2</sub> , ml/min	1430 ± 356	1259 ± 332	<0.001
Peak VE, l/min	52.9 ± 10.6	46.4 ± 10.5	<0.001
VE/VCO <sub>2</sub> Slope	34.9 ± 8.1	36 ± 9.7	0.328

Data are presented as mean ± SD. \* Paired t test

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### Role of Undersized Balloon Pre-Dilatation Before Thrombus Aspiration Among STEMI Patients

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**Objective:** ST-segment elevation myocardial infarction(STEMI) significantly contributes to mortality and morbidity worldwide, resulting from thrombotic occlusion of the coronary artery at a ruptured/eroded plaque site. The mechanical procedure of percutaneous coronary intervention(PCI) has changed for decades with or without pre-dilatation prior to stenting. The study objective is, the use of an undersized balloon pre-dilatation before thrombus aspiration may reduce embolization due to manual thrombus aspiration and thereby helps in improving tissue perfusion.

**Methods:** This is a prospective cohort study among patients with STEMI who undergo primary

PCI as a first-line treatment. The study aimed to assess and compare the TIMI flow grades, Frame counts, Blush grades after successful PCI, and ejection fraction on one-month follow-up in patients undergoing coronary thrombectomy using Thrombus Aspiration catheter(TAc) which is preceded by and not preceded by undersized balloon pre-dilatation as two comparative groups.

**Results:** Among 254 subjects who underwent primary PCI for STEMI exhibited a mean age of 60.2±11.4years, Males were 171 (67.3%) in number. When comparing the outcomes among patients with and without a small balloon pre-dilatation before thrombus aspiration were found to be as TIMI 3 flow in 116 (89.9%) vs 109 (87.2%)-p=0.12, Myocardial Blush grade of 3 in 100 (77.5%) vs 99 (79.2%)-p=0.23 and TIMI frame count of 24±9 vs 28±9 (P valve of 0.018) respectively. The ejection fraction at the time of presentation was assessed and compared with one-month follow-up 46.5±8.1 and 50.2±8.2 (P valve of <0.001) respectively.

**Conclusions:** This study helped us understand that though manual thrombus aspiration is routinely used in PCI by clinicians effectively, there is a lack of evidence of its benefits probably because of benefits of thrombus aspiration are overshadowed by the hazards of clot embolization. Hence the use of small size pre-dilatation with a balloon prior to aspiration will reduce TAc induced embolization and its hazards thereby improving the revascularization outcomes.

**Keywords;** ST elevation Myocardial Infarction, Thrombus Aspiration, Balloon Pre- Dilatation

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### Employment Outcome among Cardiac Patients following Phase Two Intensive Outpatient Cardiac Rehabilitation Programme in a Local Heart Centre in Malaysia

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#### Introduction

Cardiovascular disease is a crucial cause of morbidity and mortality in Malaysia, with impact on employment. Unemployment leads to both loss of productivity and increased socioeconomic burden to the society. There were limited local studies on employment outcome and barriers among cardiac patients in Malaysia.

#### Objective

To study the employment outcome and barriers among cardiac patients following phase two intensive outpatient cardiac rehabilitation programme (CRP) in Sarawak Heart Centre, Malaysia.

#### Methodology

We conducted a cross-sectional retrospective study from June 2021 to May 2022 to evaluate the employment outcome of 68 cardiac patients aged 18-64 years who were previously employed prior to cardiac event and completed phase two intensive outpatient CRP in Sarawak Heart Centre. The age group chosen was adopted from the definition of economically active population in Malaysia by the International Labour Organization (ILO). Following the completion of three-month phase two CRP, we evaluated the employment outcome and we asked the unemployed cardiac patients to identify reasons of unemployment with multiple responses allowed.

#### Results

Demographic data showed that 94.1% (64 of 68) patients were male. Mean age of the patients was 50.9±8.2 years. 73.5% of the patients (50 of 68) had acute coronary syndrome (ACS) and 23.5% (18 of 68) had heart failure for the referral diagnosis. Employment rate during end of phase two CRP was 91.2% (62 of 68). There were 6 unemployed cardiac patients. All of the unemployed were previous blue-collar workers with 50% of them had primary and secondary education respectively. The top three reasons identified for unemployment were health conditions and cardiac symptoms (36.4%), unable to find suitable work (27.2%) and job stress (18.1%). Other unemployment reasons include family did not support employment (9.1%) and fear of losing disability benefits (9.1%). Most of the unemployed cardiac patients (83%) expressed desire for paid work, and 66.7% of the unemployed felt that they could perform paid work

#### Conclusion

This study reported a high employment rate (91.2%) among cardiac patients following phase two intensive outpatient CRP. Reasons for unemployment identified can be managed with specialised vocational rehabilitation to further raise employment rate post cardiac event.

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### Effect of Smoking Status on Fitness Improvement within Cardiac Rehabilitation

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**Objectives:** Current smoking is a powerful predictor of future morbidity and mortality in individuals with cardiovascular disease. Those who smoke also are more likely to have higher risk clinical profiles and are less likely to complete phase 2 cardiac rehabilitation (CR). Less is known about how those who smoke benefit from CR participation, and research conducted in smoking cessation trials suggests that current smoking can impair improvements in fitness.