

ABSTRACTS

Abstracts Presentation (Poster):

1.

Enhancing Self Management for Patient After Pacemaker Insertion

N WU,¹ M WAN,¹ L MA,¹ A POON,¹ CS YUE,² W MAK,² B CHEUNG,³ WY CHU,³ E LEUNG⁴

¹Occupational Therapy Department, ²Cardiology Division of Medical & Geriatric Department, ³Health Resource Centre, ⁴Physiotherapy Department, United Christian Hospital, Hong Kong

Background: Self management is an important component in the chronic care model. Effective self management can reduce costly hospital readmissions and help patients to achieve more active lifestyle and better quality of life. However, previous studies found that some patients after having pacemaker insertion had misconceptions that pacemakers could interfere with their normal daily functioning. Some patients felt anxious in adjusting their usual lifestyle which finally led to unnecessary restrictions in their daily activities. In 2009, the cardiac rehabilitation team at United Christian Hospital took the initiative and started a multi-disciplinary workshop with 4 sessions for those patients after pacemaker insertion.

Methods: All patients who underwent the pacemaker insertion for more than 8 weeks were recruited and given a 45-minute workshop by cardiac nurse, occupational therapist, physiotherapist and social worker. For occupational therapists, we applied the psycho-educational and body-mind theory in enhancing their self management skills through education in daily living precautions, stress management skills, lifestyle adjustment and Health Qigong practice.

Results: A 2-session workshop was launched for two times from December 2009 to March 2010. Thirty-two patients joined this program. Most of them were satisfied with the arrangement of the program. During the workshop, they expressed that the program helped them to understand more about daily living precautions, reduce their anxiety and encourage them to resume a more active life role. Some patients showed positive feedback and had interest in learning and practicing Health Qigong in future. However, we found that some patients developed stiff shoulder at the operated side after the pacemaker insertion due to their misconception or fear to mobilize.

Conclusion: It is concluded that patients enjoyed this psycho-educational and body-mind approach. They found that it was useful in helping them to solve their daily activity problems after pacemaker insertion and learn self management skills. It may even be worthwhile to start this approach at an earlier stage, i.e. before the operation, in order to reduce their anxiety or misconception over the pacemaker insertion.

2.

Adherence of Healthy Lifestyle Habits in Patients After Cardiac Rehabilitation

ST LAU, NY CHAN, S CHAN, SH CHIU, SH TANG, R LEUNG, YW IP, WY LAW, A FUNG, MH LAW, PT TSUI, NS MOK

Cardiac Rehabilitation Team, Princess Margaret Hospital, Hong Kong

Purpose of study: To study the adherence to lifestyle habits of patients in graduates from the Cardiac rehabilitation programme over the ten year period.

Background: All patients graduated from the comprehensive phase 2 cardiac rehabilitation programme in Princess Margaret Hospital attended 5 education and exercise sessions. These patients had been recruited into an on going registry and evaluation protocol. Knowledge about smoking and the need to quit was an essential curriculum in the occupational therapist's session and was reinforced in the other sessions. Education in healthy diet and exercise were conducted by physiotherapists and dietitian.

Method: Graduates from the cardiac rehabilitation program from 2000 to May 2010 were assessed with a telephone survey. Questionnaire of the survey consisted of 4 sections of questions on intention to join the reunion activity, smoking, diet and exercise habits. The results of healthy life style were assessed and those between 2000 to 2006 were compared to the more recent graduates 2007 to 2010.

Results: Three hundred sixty-two (189 in 2000-2006, 172 in 2007-2010) candidates completed the survey. One hundred ninety (57%) would consider to join the reunion party of cardiac rehabilitation patients. The smoking rate decreased from 42% to 11%. Twenty-one percent ate more than 3 bowls of fatty cereal food per week. Twenty-eight percent did not take the whole

grain cereal. Only 26 % drink the recommended low fat milk. Sixty-four percent did not take the fatty or fried dim sum. Sixteen percent did not ate out while 29% had more than 5 times eating out in the week. Forty-six percent (37% in 2000-2006, 55% in 2007-2010) had regular exercise of more than 6 times a week. Seventy-seven percent had light exercise. Forty percent made use of walking as exercise.

Conclusion: The healthier life style habit had been maintained in the graduates of the rehabilitation program. The exercise habit and frequency was most difficult to adhere to.

ABSTRACTS

Abstracts Presentation (Poster):

3.

Factor Influencing Enrolment Patients for Cardiac Rehabilitation Program in National Heart Institute, Kuala Lumpur Malaysia

A AZRAN

Exercise Physiologist, Physiotherapy & Rehabilitation, National Heart Institute, Kuala Lumpur, Malaysia

Background: Coronary Heart Disease is one of the common chronic disorders in the majority of developed countries affecting over one in ten people in Malaysia. Integrated care for patients who survive coronary heart disease is lacking. Many patients are not offered cardiac rehabilitation and secondary prevention is not optimal. Understanding the factor at each of these levels is necessary to lead to the most effective strategies to improve cardiac rehabilitation program.

Objective: The purpose of this study is to determine on the factors influencing enrolment of patients for cardiac rehabilitation program in the National Heart Institute, Kuala Lumpur Malaysia, which constitutes a major health problem in modern societies.

Method: The study was conducted in National Heart Institute, Kuala Lumpur Malaysia. A total of 116 respondents, 71 males and 45 females aged between 30-70 years were selected through a systematic random sampling. A systematic random sampling was considered to be the most appropriate sampling method for this study based on the staggering nature of patient flow to the cardiac rehabilitation program. The primary data for this study was collected through a survey by using self design phenomenological questionnaire.

Results: The main factor influenced majority of respondents was that cardiac rehabilitation program is inconvenient because of its location. About 72.4% patients does not live in Kuala Lumpur and the majority of them came from rural areas and the distance from home to this center is an issue for them.

From the analysis, 61.2% of respondents has not been recommended, referred or encouraged by physician. This shows, it is still a cause for concern as it indicates something is not right about that aspect of the cardiac rehabilitation system of referring and recommending even if most of patients do have an advantage in knowledge about benefit, belief, control and management relation to the program.

Conclusion: This study provides information about factor influencing enrollment patients for cardiac rehabilitation program. But there is still need of researching the factor and barrier of influencing patient enrolling into the program. Continued research on identifying these factor at each of these levels is necessary to lead to the most effective strategies to improve cardiac rehabilitation program.

4.

Correlation Between Six Minute Walk Test and Exercise Stress Test in Percutaneous Coronary Interventions Patient

BB KHONG, J ARUNKUMAR

Rehabilitation Department, National University Hospital, 5 Lower Kent Ridge Road, Main Building 1, Singapore 119074

The main objective is to determine the correlation between six minute walk test (SMWT) and exercise stress test (EST) as a functional capacity indicator and its contribution in clinical practice as well as community cardiac rehabilitation among the post Percutaneous Coronary Intervention (PCI) patients after Cardiac Rehabilitation Phase II (CRP II). Retrospective cohort study among the PCI patients, who has undergone SMWT and EST, is conducted in the Rehabilitation centre, National University Hospital, Singapore. Various parameters were analysed to define the correlation between SMWT and EST. The results from the nine subjects (age 49.7 ± 15.7 years; height 1.68 ± 0.07 m; weight 76.63 ± 15.73 kg) showed the distance covered by SMWT was correlated to peak work ($r=0.028$) of EST. The systolic blood pressure (SBP) of SMWT was correlated to the achieved heart rate percentage (HR%) ($r=0.039$) of EST; the scores of Modified Borg scale (MBS) ($r=0.004$) and the Saturation of peripheral oxygen (SpO_2) ($r=0.026$) of SMWT were correlated to SBP of EST. Additionally, this study showed that there were significant difference in the distance covered ($p=0.001$) and the SpO_2 ($p=0.023$) of SMWT between pre and post CRP II. In conclusion, SMWT is one of the predictive markers for EST performance. Determining the correlation between SMWT and EST would improve the validity and reliability level of SMWT. SMWT is simple, safe

and useful objective outcome measurement of functional capacity and guideline for exercise prescription in clinical practice as well as in the community cardiac rehabilitation among PCI patients. Besides, it may replace the EST as a functional capacity indicator among the population who cannot perform EST.

ABSTRACTS

Abstracts Presentation (Poster):

5.

The Investigation of Ventilation Response in the Cardiopulmonary Exercise Test of the Poor Prognosis Heart Failure Patients

R GOTO,¹ Y KIMURA,² M YOSHINAGA,³ Y MATSUI,³ S YAMAMOTO,³ Y AKITA,³ S HARA,³ T TSUKATA,³ T ISHIDO,³ T TOUKOU,³ S KARAKAWA³

¹Cardiac Rehabilitation Center, Saiseikai Izuo Hospital; ²Health Science Center, Kansai Medical University; ³Dev Cardiology, Saiseikai Izuo Hospital, Japan

Background: The peak oxygen uptake (PeakVO₂) by cardiopulmonary exercise test (CPX) is believed to be useful for the prognosis estimation. It is also using for the severity assessment of the chronic heart failure.

Subjects and Methods: We examined the results of cardiopulmonary exercise test of the patients with no cardiac disease and with the poor prognosis (death) in the chronic heart failure patients. Seven patients with moderate ADL who died within 2 years after CPX due to heart failure and 7 patients without cardiac disease (over 55 years old) were investigated. The average age was 64.7±6.4 years old, and there was no difference between 2 groups. Cardiopulmonary exercise test was performed with a Ramp protocol to symptom limit.

Results: VE/VCO₂ slope, minimum VE/VCO₂ and minimum VD/VT showed a significant difference between 2 groups as well as peakVO₂. PeakVO₂; 9.77±2.14 vs 21.24±2.77 (p<0.001), VE/VCO₂ slope; 42.51±7.02 vs 27.24±2.18 (p<0.001), minimumVE/VCO₂; 45.07±7.05 vs 29.89±1.78 (p<0.001), minimum VD/VT; 0.33±0.02 vs 0.27±0.03 (p<0.001), poor prognosis and non-cardiac diseases, respectively.

Conclusions: The prognosis value of peakVO₂ was recognized as well as the previous reports. However, in fact the evaluation of peak VO₂ by exercise test has a risk in the heart failure patient. On the other hand, as for the evaluation of VE/VCO₂ slope, an excessive stress is not necessary, and an exercise test could be performed relatively safely. These results suggested that VE/VCO₂ might be useful for poor prognosis estimation rather than peak VO₂ in the severe heart failure patient.

6.

Risk Factors Assessment and Prevention of Coronary Artery Diseases in the Younger Population of United Arab Emirates

A HAQUE,¹ G JAMIL²

¹Department of Psychology and Counseling, UAE University; ²Department of Cardiology, Tawam Hospital, Al Ain, UAE

The incidence of coronary artery disease in the UAE has increased rapidly in recent years and a significant number of patients under age 40 are now treated for Acute Cardiac Coronary Syndrome (ACCS). This study on 110 patients attempts to a) identify risk factors for Coronary Artery Disease (CAD) in patients 40 years of age or younger, b) analyze controllable and non-controllable factors in the target population (locals and non-locals), c) study compliance with medical regimen after discharge from hospital, d) discusses implications, and suggest ways of minimizing incidence of CAD in the UAE. Scales and measures of psychosocial stress index and patient/family interview are used to assess risk factors leading to ACCS. Materials included basic demographics survey, CAD Assessment, type A Personality test, stress-handling test, and emotional IQ test. No previous study on this topic has been conducted in the UAE and it is anticipated that research findings will lead to a better understanding of the factors involved in increased ACSS and their prevention in this country.

ABSTRACTS

Abstracts Presentation (Poster):

7.

Effect of Nurse Follow-Up Dietary Intervention on Dietary Behaviour and Disease Related Knowledge in Post Myocardial Infarction Patients in Hong Kong: A Randomized Controlled Trial KFV MOK,¹ SMA TSANG,² WHJ SIT,³ TL CHENG,¹ CS CHIANG¹

¹Coronary Care Unit Queen Elizabeth Hospital; ²The Hong Kong Polytechnic University; ³The Chinese University of Hong Kong, Hong Kong

Background and Aim: Post MI survivors are at higher risk of fatal or non-fatal coronary events. Therapeutic lifestyle changes, including dietary modification, have been emphasized as the cornerstone of secondary prevention. The aim of this study was to examine the effects of a Nurse led Follow-up Dietary Intervention (NFDI) programme on dietary behavioral change (primary outcome), blood lipid levels (secondary outcome) and the knowledge level of myocardial infarction among patients with coronary artery disease in Hong Kong.

Design Methods: A randomized controlled trial was conducted. Coronary artery disease patients with diagnosed myocardial infarction (n=82) who met the sampling criteria in a regional hospital, were randomly assigned to either an intervention group (the Nurse Follow-Up Dietary Intervention – (NFDI) + conventional treatment) or control group (the conventional treatment). The knowledge of coronary artery disease risk factors identification, dietary modification behaviour and blood lipid profile were assessed to evaluate the programme effect. Data collection was conducted at the baseline (T₁), 1 week post intervention (T₂), and 3 months post intervention (T₃). The effect of the intervention was assessed by a self-report questionnaire and blood tests. T-test and time-by-group analysis of variance with repeated measure ANOVA was used. Intention-to-treat analysis was conducted.

Results: Patients in the intervention group demonstrated a significantly a better dietary modification behaviour in a reduction in high fat and high salt intake and increased consumption of Mediterranean type diet. The majority of these impacts were maintained at 3 months after the intervention. Significant positive dietary changes were found among participants of the IG in reduction of intake of saturated fat (F=22.48, p<0.001), salted and preserved food (F=13.58, p<0.001), increase intake of vegetable, fruit, nuts and whole grain food (F=40.48, p<0.001). Although results of secondary outcomes, TG and TC, were not statistically significant, HDL trend was in the expected direction in favor of IG (F=8.982, p=0.001).

Conclusion: A nurse led follow-up dietary intervention programme does have a positive impact on patients with coronary artery disease. Through participating in the NFDI rehabilitation programme, coronary artery disease patients after myocardial infarction demonstrated significantly better dietary behaviour and sustained 3 months after the intervention. Although the majority of the lipid profile did not show significant difference between control and intervention group, the increase in cardiac-protective factors-High Density Lipoproteins is an encouraging sign for further studies.

Relevance to Clinical Practice: This study raises the attention of the importance of nurse roles in cardiac rehabilitation. This study might generate momentum and right direction for the development of evidence-based cardiac rehabilitation nursing in Hong Kong.

8.

Incidence of Abnormal Electrocardiography Which Affects to Cardiac Rehabilitation Management

W THIRAPATAPONG, R SRIBUN, U ATICHADMANEE

Department of Rehabilitation Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand

Objectives: To determine incidence and time to abnormal electrocardiography (ECG) which affected to cardiac rehabilitation management and also assess time to abnormal ECG.

Material and Method: The project was a retrospective review of ECG telemetry and medical recordings of the patients who visited outpatient cardiac rehabilitation clinic, Siriraj hospital from October 2008 to May 2009. The primary clinical variable was the percentage of abnormal ECG. Time to abnormal ECG was estimated by Kaplan-Meier method of survival analysis.

Results: Five hundred forty patients, 378 males and 162 females, were enrolled. The incidence of abnormal ECG which affected to cardiac rehabilitation management was 27.96%. From Kaplan-Meier Analysis, 25% and 50% of the patients had first abnormal ECG at 16 and 61 months respectively after cardiac surgery or hospital discharge.

Conclusion: The incidence of abnormal ECG in outpatient cardiac rehabilitation clinic was 27.96%. To improve the clinical usefulness of ECG telemetry monitoring, the patients who survived at least 16 months should be monitored.

ABSTRACTS

Abstracts Presentation (Poster):

9.

Experiences of Patients with Rheumatic Heart Disease Undergoing Cardiac Rehabilitation at the Philippine Heart Center: A Phenomenological Study

AKC LEANO

Philippine Heart Center, Philippines

The incidence of rheumatic heart disease is rare in industrialized countries but it is still a concern in developing countries like the Philippines. Cardiac rehabilitation is a program that aims to reverse the limitations that developed following adverse pathophysiologic and psychological consequences of cardiac events. It also aims to modify the major and minor risk factors and help patients resume their normal lives. The purpose of this study is to explore the experiences of patients with rheumatic heart disease undergoing cardiac rehabilitation at the Philippine Heart Center, and its implications to nursing practice. There were five (5) participants in the study which were regarded as co-researchers. The study is descriptive, interpretative, exploratory, reflective and analytical in nature focusing on the experiences of these co-researchers undergoing cardiac rehabilitation at the Philippine Heart Center. They narrated their stories and experiences during their pre-operative and post-operative stage. The stories of the co-researchers are the journey that they embarked from the time that they were diagnosed to have rheumatic heart disease and up to the time they were completing cardiac rehabilitation. In between those times are circumstances, challenges and events that made them survivors in their own name. Findings of this study were regarded as shared themes that surfaced as a result of the study. This includes illness as a complication of poverty; bridging life no matter what it takes; addressing fears with mixed emotions but hopeful for a beginning chapter in life;

standing in the storm family is the best support; I am but a small voice I am but a small dream; all events in life happen for a purpose, the then, now and the future. The recommendations of this study are for patients that they empower themselves in achieving their health needs. That they maintain their hope and dreams despite any health conditions. The story of the co-researcher is truly rich that it can be a story of inspiration for those individuals who are in the same plight. Moreover, recommendation is likewise for cardiac rehabilitation centers that they continue its noble intentions and commitment in providing clinically effective cardiac rehabilitation services. That it continue its service above gain in providing high quality services in a safe and cost-effective environment in equal partnership with physicians and other health care professionals, patients and their families. That it continue the promotion of cardiac rehabilitation not just in the Philippines but all over the country. Lastly, that nurses remain to abide by their obligation and devotion in the prevention, promotion and rehabilitation aspects of care. In providing nursing care, nurses should also ruminate outside of the box. The needs of the patient are not confined on drugs and procedures alone. Continue to take part in being a patient advocate, counselor and educator. Exposure of nurses to cardiac rehabilitation centers can provide appreciation on other fields that are likewise in need of nursing care.

10.

Effectiveness of Using Triage System to Improve Physical Wellness of High Risk Cardiac Patients in Community

CHE WONG,¹ HWA CHING,¹ YHP POON,¹ ESL CHOW²

¹Department of Physiotherapy; ²Extended Rehabilitation Centre, Department of Medicine and Geriatrics, Tuen Mun Hospital, Hong Kong

Introduction: High risk group of cardiac patients adopted sedentary lifestyles and gave up exercise in the community. Cardiac rehabilitation program for high risk groups are thus essential in giving clear instructions, initiatives to exercise and exercise training with safety monitoring.

Objectives: 1) To provide appropriate physiotherapy interventions, upgrade their active lifestyles for those triaged as high risk group. 2) To establish the safe exercise zone in the community exercise program.

Methodology: A group of high risk cardiac patients were recruited by American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) risk stratification from a group of cardiac patients with percutaneous coronary interventions. They received fitness training with medical supervision, electrocardiogram (ECG) and blood pressure monitoring as American Heart Association (AHA) suggested until safety limit established. Clinical outcomes were evaluated by 6-minutes walk test (6MWT), exercise stress test and endurance intensity before and after 8 weeks of training program.

Results: 36 patients were enrolled in the program with 28 male and 8 female with mean age of 64±9.6. The mean training sessions was 13. 6-minute walk test and exercise stress test results significantly improved from 332m to 408m ($p<0.001$) and from 4.0 MET to 5.6 MET ($p<0.001$) respectively. Exercise training intensity on endurance significantly improved

from 2.5 MET to 3.9 MET ($p<0.001$). Eighteen patients joined Yan Oi Tong community cardiac training program with good adherence to exercises.

Conclusion: With the monitoring system in place, physical wellness of high risk cardiac patients will further improve with self-monitoring exercise in the community.

ABSTRACTS

Abstracts Presentation (Poster):

11.

Ethnicity Differences in Pulse Wave Velocity and Arterial Compliance

SPC NGAI, AYM JONES

Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong

Study Objective: Ethnicity is one factor leading to the differences in cardiovascular disease prevalence and risks. Pulse wave velocity and arterial compliance are non-invasive measurements of vascular stiffness and thus reflect the status of arterial health. This study investigates whether ethnicity could be a major factor contributing to the discrepancies in cardiovascular health.

Material and methods: Eleven healthy Caucasians (5 males and 6 females) and eleven age- and gender-matched Chinese born and living in Canada were recruited to participate in the study. Subjects were allowed to rest in supine for at least 15 minutes before measurement. A non-invasive sensor was placed onto the right radial wrist to record the small and large artery elasticity while non-invasive plethysmography sensors were placed on the toes, femoral artery and carotid artery to measure the time for pulse propagation within different body segments.

Results: Large and small arterial elasticity indices were higher in Caucasian (21.19 ± 1.12 ml/mmHg x 10 and 10.29 ± 0.68 ml/mmHg x 100) than in Chinese (19.72 ± 1.12 ml/mmHg x 10 and 9.21 ± 0.74 ml/mmHg x 100) ($p > 0.05$). The Aortic pulse wave velocity was insignificantly higher in Chinese (496.95 ± 21.43 cm/s) than Caucasian subjects (440.83 ± 21.36 cm/s) ($p = 0.078$). Caucasian subjects reported a higher level of physical activity level (59.45 ± 8.6 weighted times/week) than Chinese (51.45 ± 5.82 weighted times/week) ($p = 0.451$).

Conclusions: Under the same living environment, our preliminary data showed that Caucasians may have a slower pulse wave velocity and higher arterial compliance indices than Chinese. However this may be associated with a higher level of physical activities in the Caucasians.

12.

Prevalence of Modifiable Cardiovascular Risks in a Worksite

ST LAU,¹ PT TSUI,¹ M CHAN,² A LAI²

¹Princess Margaret Hospital, ²Department of Medicine & Geriatrics, Community Health Resource Center, Hong Kong

Objective: Primary prevention of cardiovascular diseases can prevent 80% of disease by controlling modifiable risks with healthy lifestyle and medications. A worksite cardiovascular health promotion project was conducted since 1995 for the hospital staff utilizing screening of the measurable and modifiable cardiovascular risks and heart health education through education pamphlets, counseling and health talks.

Methods: The prevalence of cardiovascular risks including blood pressure (BP), waist circumference, hip circumference, waist hip ratio (W/H), weight, body mass index (BMI), fasting blood glucose, total cholesterol, triglyceride (TG), high density lipoprotein (HDL) and low density lipoprotein (LDL) were compare between the 1995+1996 and the 2009 participants.

Results: Data of 1780 participants in 95/96 group and 2027 participants in 2009 were analyzed.

Cardiovascular Risks Assessment

	1995 +1996 (%)	2009 (%)
W/ H ratio M>0.9, F>0.8	495/1780 (27.8)	269/457 (58.7)
BMI >25 kg/m ²	688/1780 (38.7)	281/466 (60.3)
Glucose >6 mmol/l	118/1760 (6.6)	157/2027 (7.7)
Cholesterol >5.2 mmol/l	737/1779 (41.4)	998/2027 (49.2)
TG >2.3 mmol/l	125/1777 (7)	138/2027 (6.8)
HDL <0.9 mmol/l	45/1772 (32)	840/2007 (41.9)
LDL >3.4 mmol/l	567/1772 (32)	840/2007 (41.9)

Conclusion: The 2009 participants showed higher prevalence of risks factors, including W/H ratio, BMI, fasting glucose, total cholesterol, HDL and LDL. There is less prevalence in high blood pressure and triglyceride. The effort to control these modifiable cardiovascular risks factors should be enhanced for primary prevention of cardiovascular diseases.

ABSTRACTS

Abstracts Presentation (Poster):

13.

Benefits of Physical Activity on Cardiovascular Health in Older Adults

SY YAU, YL CHEUNG

The Open University of Hong Kong, Pok Oi Hospital, Hong Kong

Introduction: Physical activity is defined as any bodily movement produced by skeletal muscles resulting in energy expenditure. It includes occupational, household, physical exercise to leisure activities. Optimal physical activity levels are important factors in maintaining health that includes healthy growth and development, improved psychological well-being and maintain energy balance. Research suggested that physical activity is especially an important factor in maintaining quality of life in older adults and essential for their cardiovascular health. This objective of the study is to investigate the benefits of physical activity on cardiovascular health in older adults.

Methodology: Based on a review of published literature, the benefits of physical activity on cardiovascular health in older adults are identified.

Results: Research suggested that physical activity benefits older adults on:

1. restoring the protective effect of preconditioning in aging heart
2. protecting against in-hospital mortality in elderly patients with myocardial infarction
3. decreasing mortality risks from cardiovascular disease and all causes with increased physical activity
4. reducing blood pressure as an acute benefit and improving physical fitness after several months of regular physical activity as a short-term benefits
5. reducing cardiac afterload and moderating typical patterns of age-related ventricular myocyte hypertrophy and apoptosis
6. facilitating improvements in ventricular diastolic filling and attenuating age-related deterioration in heart rate variability

7. promoting a significant reduction in total cholesterol, triglycerides and low-density lipoprotein cholesterol (LDL-C) and a significant increase in several high-density lipoprotein subfractions and favorable changes in particle concentration and size of LDL-C
8. decreasing 2% of resting systolic blood pressure

As a result, physical activity benefits cardiovascular health in moderating the physiologic changes and controlling the risk factor of cardiovascular disease in older adults.

Conclusion: Older adults are at risk of cardiovascular disease and research suggested that physical activity is considered an important factor in maintaining cardiovascular health for older adults. According to Healthy People 2010, physical activity benefits cardiovascular health on decreasing the risk of death from heart disease and helping to reduce blood pressure. Also, literature review in this study suggested that physical activity benefits older elders' cardiovascular health in various ways, thus, it is recommended that older adults should perform physical activities regularly in order to maintain their cardiovascular health.

14.

Relationship Between Myocardial Infarction and Functional Capacity During Early Phase of Cardiac Rehabilitation

MY SAARI, LSW LI, CP LAU, KP LAM, YY HO, J HAI, RHW CHAN, SWL LEE, CW SIU, HF TSE

Cardiac Prevention and Rehabilitation Centre, Tung Wah Hospital and Queen Mary Hospital, Hong Kong

Objective: The present study was undertaken to identify whether type of myocardial infarction (MI) and number of MI lesion influence the functional capacity and physical performance of the cardiac rehabilitation participant.

Design: Prospective cohort study.

Setting: Patients were selected from the Tung Wah Hospital Cardiac Rehabilitation and Secondary Program who had an evidence of myocardial infarction (MI) changes on electrocardiograph (ECG) and attended the Phase I and Phase II Cardiac Rehabilitation Program.

Patients and methods: 552 consecutive patients who had evidence of MI and attended the cardiac rehabilitation program, and have complete medical chart and fitness data.

Results: The study demonstrated that there is a significant association between gender and type of MI lesion (X^2 22.486, $p < 0.001$) with odds ratio = 2.61 and relative risk = 1.78 (95% CI 1.74-3.91). The present study also observed there were highly significant relationship between types of MI lesion with age ($F=10.697$, $p=0.001$), educational status ($F=17.238$, $p < 0.001$), Left ventricular ejection fraction ($F=12.430$, $p < 0.001$), Left ventricular function ($F=7.180$, $p=0.008$), functional capacity (METs) ($F=16.643$, $p < 0.001$), peak exercise heart rate ($F=13.313$, $p < 0.001$), 6-min walk test (6-MWT) ($F=24.165$, $p < 0.001$) and Specific activity scale ($F=15.465$,

$p < 0.001$). It is also demonstrated that the number of AMI lesion did not show any significant relationship with functional capacity (METs) ($F=0.58$, $p=0.810$), peak exercise heart rate ($F=0.006$, $p=0.937$), 6-MWT ($F=0.759$, $p=0.384$) and specific activity scale ($F=0.320$, $p=0.572$).

Conclusion: Type of MI lesion (ST-elevation MI/Non-ST elevation MI) demonstrated a strong relationship with physical performance and functional capacity in post-MI patients. However, symptoms reported functional classification shows poor relationship with type of MI lesion. The numbers of MI lesion on ECG finding is a poor predictor for physical performance but shows highly significant relationship with left ventricular function.