ABSTRACTS

Abstracts Presentation (Oral):

1.

Health Promotion and Screening of Cardiovascular Risks in the Community - Is It Needed?

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Background: Modifiable risk factors are targets of intervention in prevention by healthy lifestyle and medications. It is not known whether the community health promotion programs are directed to the high risk individuals or those with unknown history. The aim of the study is to assess the level of modifiable cardiovascular risk of hypertension, hyperglycaemia, hypercholesteraemia and overweight in the participants of community health promotion programs.
Method: Community health promotion programs were conducted with collaboration of the local District Council in the 8 housing estates. A self administered questionnaire with demographics and known history of hypertension, hypercholesteraemia and diabetes was acquired. Body weight, height, blood pressure, spot blood sugar and cholesterol screening were taken. Counseling and health talk were given after the screening.
Results: The results showed high prevalence of the risks factors in the participants. Large proportion of known history of the risk factors are not well controlled and high percentage of participant is not aware of the modifiable cardiovascular risks.
Conclusion: Health promotion and education programs need to be enhanced to achieve healthy lifestyle and medical treatment of the modifiable cardiovascular risks.

	Number	Percentage
Participants	1169	100.0%
Male/Female	234/935	20.0%
Age ≤65 years	568	48.5%
Age >65 years	601	51.5%
History of Hypertension	391	33.4%
History of Hypercholesteraemia	196	16.8%
History of Diabetes Mellitus	118	10.1%
High Blood Pressure (>140/90 mmHg)	504	43.1%
- Known History	244	20.8%
- Unknown History	247	21.1%
High Blood Sugar (>7.8 mmol/l)	194	16.9%
- Known History	66	5.64%
- Unknown History	119	10.2%
High Cholesterol (5.2 mmol/l)	367	31.4%
- Known History	76	6.5%
- Unknown History	291	24.9%
Overweight (BMI >25)	463	39.6%

2.

Cardiac Rehabilitation for Patients with Congestive Heart Failure: A Review of the Outcome Measures over Four Years

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Objectives: To review the outcome measures in heart failure rehabilitation program (HFRP) for patients with congestive heart failure (CHF) over the past four years (from July 2001 to June 2005).
Methods: Patients recruited into HFRP were studied. Exercise tolerance (ET), quality of life (QOL), knowledge related to heart failure, and daily sodium intake (DSI) together with low-density lipoprotein cholesterol (LCL-C) level were evaluated by six minutes walk test, health status survey, questionnaire, and anthropometry together with lipid profile measurement respectively.
Results: Six hundred and seventy-two patients (393 males) with mean age of 70 ± 11 (range 24-92) years were recruited into HFRP. One hundred and forty-four patients (21%) completed Phase II training. There was significant improvement in ET ($p<0.001$). There were improvements in some domains in patients' QOL. One hundred and forty-five patients (22%) completed a course of home base rehabilitation. Eighty-five percent of smokers ceased smoking. Among patients who revealed inadequacy of knowledge during pre-assessment, improvement in knowledge of medication, diet, heart disease and cardiovascular risk factors was noted in 83%, 84%, 76% and 88% of those patients respectively after completion of the course. Two hundred and fifty patients (33%) completed a course of 3 dietary visits. During the initial assessment, 214 patients (86%) had their DSI more than 100 mmol/day. By the end of the dietary course, 65% of these patients had their daily sodium intake reduced. Ninety-eight patients were hyperlipidaemic (LDL-C >2.60 mmol/L). They showed reduction in their mean LDL-C level from 3.32 mmol/L to 2.71 mmol/L by the end of the course ($p<0.001$).
Conclusions: Patients demonstrated improvement in exercise tolerance, knowledge, and dietary compliance after completion of heart failure rehabilitation program.

ABSTRACTS

Abstracts Presentation (Oral):

3.

Disease Management Programmes for Heart Failure: What Make a Difference?

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Objective: Disease management programmes (DMP) evolved as an innovative care model to enhance the discharge outcomes of patients with heart failure. Yet, clinical trials which have examined their effectiveness have reported inconsistent findings. This may be explained by variations in the design of DMPs. This systematic review aims at identifying the characteristics of DMPs which are crucial to reducing hospital readmission and/or mortality of patients with heart failure.
Methods: A systematic computerized search was conducted to identify randomized controlled trials of the last 10 years, which examined the effects of DMPs on hospital readmission and mortality of heart failure patients. The identified DMPs were classified as effective and ineffective according to statistically significant changes in hospital readmission, mortality or the combined outcome. The designs of the effective and ineffective DMPs were analyzed according to the key characteristics as recommended by the European Society of Cardiology for DMP for heart failure patients. These two groups of programs were then systematically compared in order to identify those characteristics crucial to the effective delivery of such program.
Results: Twenty-one trials were identified, 11 (52.4%) of which reported DMPs were effective. They significantly reduced the number of hospital readmissions by 29-85% (mean ± SD = 44.2 ± 14.4%; RR: 0.56 ± 0.14). Four of them significantly reduced the mortality rate by 28-78% (mean ± SD = 57.6 ± 21.9%; RR: 0.42 ± 0.22) and eight of them significantly reduced the combined event rate by 38.0 ± 17.3% (RR: 0.61 ± 0.17). As compared with the ineffective DMPs, the effective DMPs are more likely to be multi-faceted and consist of an in-hospital phase of care, intensive patient education, self-care supportive strategy, optimization of medical regimen, and ongoing surveillance and management of clinical deterioration. Cardiac nurse and cardiologist should be actively involved and a flexible approach should be adopted to deliver the follow-up care.
Conclusion: This review defines precisely the characteristics of the care team and the organization content and delivery method of the DMP which are crucial to enhance the discharge outcomes of heart failure patients.

4.

The Comparison of Home-based Resistance Plus Aerobic Exercise Training Versus Aerobic Exercise Alone in Community Phase of Cardiac Rehabilitation Program in Coronary Artery Disease Patients

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Objective: To investigate the effects of additional resistance training on physiological and psychological outcomes of coronary artery disease (CAD) patients in Phase III Cardiac Rehabilitation.
Methods: Forty CAD patients who had completed phase II cardiac rehabilitation were recruited and randomized into two groups. Both groups (Group 1, n=19; Group 2, n=21) performed 225 to 300 minutes of aerobic exercises weekly, whilst Group 1 also performed trice weekly of resistance training using five levels of color-coded progressive resistance therabands. In each resistance training session, patients were instructed to work 3 sets (12-15 repetitions) of exercises in seven muscle groups.
Data was analyzed with T-test (SPSS 11.0).
Results: Both groups were similar at baseline in measures of 6 minutes walk test, grip strength, knee strength, body mass index, body fat %, waist-hip circumferences ratio and SF-36 score (all p>0.05). After 12-week intervention:

1) Group 1 demonstrated a significant increase (444.7 ± 97.8 to 471.6 ± 99.8 m, p=0.00), whereas Group 2 showed a significant decrease (433.5 ± 80.3 to 420.5 ± 83.2 m, p=0.01) in 6 minutes walk distance. However, no statistically between groups difference (p=0.9) was identified.
2) There were no statistically significant within and between group difference in grip and knees strength except the left hand grip in Group 1 showed a significant increase (19.1 ± 6.8 to 20.5 ± 7.4 kg, p=0.023).
3) Body composition and SF-36 questionnaire showed no significant within and between groups difference.

Conclusion: This study demonstrated 12 weeks of unsupervised aerobic training alone and a combined aerobic and resistance training were equally effective in maintaining endurance, muscle strength, body composition, and quality of life. In view of theraband do not induce any adverse effect, resistance training is recommended for older CAD patients in Phase III rehabilitation.

ABSTRACTS

Abstracts Presentation (Oral):

5.

Reduction of Rehospitalisation with Cardiac Rehabilitation in Patients with Coronary Disease

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Background: Cardiac rehabilitation programme (CRP) achieved optimal physical and psychological health of patient with coronary artery disease (CAD) through improvement in quality of life and facilitation in the control of risk factors. CRP comprises of an in-patient stage (Phase I) and outpatient phase held from 2 to 6 weeks post discharge (Phase II), which includes patient education and exercise sessions. This study aims to compare rehospitalisation rates between patients who participate in the post-discharge CRP versus eligible patients who did not.
Methods: A retrospective study of patients with CAD who fulfilled the inclusion criteria for CRP were identified. They were diagnosed with acute coronary syndrome, and had undergone percutaneous coronary intervention (PCI) or coronary bypass graft surgery (CABG). Convenient sampling of the first 50 eligible patients in each of the 4 arms was employed in the year of 2005. The four arms consist of patients who had undergone (1) PCI + CRP; (2) PCI - CRP; (3) CABG + CRP and (4) CABG - CRP. All patients received inpatient CRP Phase I. Post-discharge medical records were abstracted for evidence of cardiac-related readmission data for the following 6 months.
Results: Two hundred patients (85% males) with mean age of 53 ± 7.3 years were enrolled into the study. Overall, there was 24.6% increased in cardiac-related rehospitalisation in the patients who did not participate in the post-discharge CRP (p=0.22). There was 37.5% increased in cardiac-related rehospitalisation in the arms of patients who had PCI - CRP (p=0.10). There were no differences in cardiac-related rehospitalisation observed in the CABG arms. However, there was a significant 33% increased in non-cardiac rehospitalisation in (4) CABG - CRP than (3) CABG + CRP (p=0.04; OR= 2.6; 95% CI 1.02-64).
Conclusion: CRP significantly reduces rehospitalisation in patients after CABG, which will influence health care cost effectiveness.

6.

LDL- and HLD-Cholesterol Optimization Using Phytonutrient Combination Therapy: First Line Intervention and Adjust Therapy to Statins

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Introduction: Framingham risk analysis shows that simultaneous decreasing LDL-c and increasing HDL-c has a strong correlation with risk reduction for development of cardiovascular disease. Current prescription lipid lowering therapy has shown excellent results in reducing LDL-c, but limited results for HDL-c increase. Our research focuses on using phytonutrient combinations in optimizing both lipoprotein fractions. We present our results of phytonutrient combination therapy as a first line treatment for hypercholesterolemia, as well as adjunct therapy to statin medication.
Methods: Three studies were performed at three locations in subjects with elevated LDL-c levels (130-200 mg/dl at baseline), that used phytonutrient combination therapy (viscous soluble fiber, policosanol, phytosterols, and *Chrysanthemum morifoliumt*) as stand-alone or along with statins for a period of 8 weeks.
Results: See table.
Conclusion: The intervention product, that lowers cholesterol through 4 different mechanisms, is effective in lowering LDL-c, and increasing HDL-c, making it an effective alternative for patients with mild hypercholesterolemia, also in combination with statin medication.

Table.

	Parameter	BL level (mg/dL)	BL(mg/dL)	t=8 weeks (mg/dL)	Δ %	p-value
Study 1	LDL-c	>130	168	127	-24.5	<0.0001
	HDL-c	<40	32	37	+12.0	n.s.
Study 2 (adjunct to statins)	LDL-c	>130	150	118	-21.1	<0.05
	HDL-c	<40	34	42	+23.2	<0.05
Study 3	LDL-c	>130	154	119	-22.5	<0.05
	HDL-c	<40	25	30	+20.2	n.s.

ABSTRACTS

Abstracts Presentation (Oral):

7.

Predictors of Psychological Distress of Patients after Coronary Artery Bypass Graft (CABG) Surgery

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Background: Coronary Artery Bypass Grafting (CABG) surgery is the treatment choice for patients with coronary heart disease to reduce their symptoms, increase physical capacity and promote a sense of well-being. However, about one-forth of patients reported psychological distress after CABG, with depression and anxiety being particularly prominent. Regardless of disease severity, the more psychologically distressed CABG patients experienced more pain, hospital readmission, cardiac morbidity and mortality than non-distressed counterparts. Yet, the predictive factors in the pre-operative stage for psychological distress are under-investigated. Such information is important to inform the development of effective preoperative care to promote the psychological recovery of patients receiving CABG.
Aim: The purpose of this study is to determine the level of psychological distress of the Chinese patients undergone CABG in Hong Kong and to identify its significant predictors.
Methods: Prospective longitudinal correlational design was used. Data was collected from a sample of 78 convenience consecutive series of hospitalised patients undergone CABG. Psychological distress, coping and social support were measured preoperatively by the use of the Chinese version of the *Hospital Anxiety and Depression Scale (HADS), the Ways of Coping Questionnaire (WCQ) and the Medial Outcomes Study Social Support Survey (MOS-SSS-C)* respectively. Demographic and clinical data of the patients was obtained by reviewing the medical records. Repeated assessment of psychological distress took place in the postoperative period when patients' condition had been stabilized.
Results: Postoperative psychological distress occurred in 25% of Chinese CABG patients. Among the various demographic, clinical and psychosocial factors, social network size, self-controlling coping strategy and preoperative psychological states were identified as the most significant predictors of postoperative psychological distress. They, in total, accounted for 40% ($p \leq 0.001$) of the variance in post-CABG psychological distress. Among these factors, social network size played the most prominent role with beta = -0.51 ($p < 0.001$).
Conclusion: The high prevalence of psychological distress among CABG patients urges the need to develop effective intervention to promote their psychological recovery. Based on the identified predictors, psychological assessment and counselling may be a high priority care for the candidates for CABG. Interventions, which aim to promote their post-CABG psychological adjustment, should also target at bolstering their social network size and enhancing their problem-focused coping strategies.

8.

Phytoestrogen for Primary and Secondary Prevention of Cardiovascular Diseases: From Observation to Intervention

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Introduction: Epidemiological studies suggest that a high intake of phytoestrogen is associated with lower incidence of cardiovascular events. However, the relationship between dietary intake of isoflavone, a major component of phytoestrogen, and vascular function remains unclear. It is also unknown if isoflavone supplement can clinically reverse vascular dysfunction in high risk patients.
Methods: The first part of study was a cross-sectional study. We studied the level of isoflavone intake and its relationship with brachial artery flow-mediated vasodilation (FMD), carotid intima-media thickness (IMT) and brachial-ankle pulse-wave velocity (baPWV) in 317 consecutive patients with high cardiovascular risk and 100 normal controls. A validated food frequency questionnaire for Chinese was used to capture their dietary intake. All patients were on stable diet pattern for at least 3 months before assessment. FMD and IMT were measured using high resolution ultrasound and baPWV was measured using VP2000 vascular profile system (Colin Corp). The second part of study was a double-blinded, placebo-controlled trial in which 106 patients with ischemic, non-cardioembolic stroke were randomized to receive either 80 mg isoflavone/day or placebo for 12 weeks. Surrogates of vascular function were measured at baseline and reassessment.
Results: In cross-sectional study, isoflavone intake was significantly lower in the diseased population than controls (P=0.007). After multivariate adjustment, per mg of isoflavone intake predicted 0.026 (in %, P=0.028) increase in FMD and 1.815 cms^{-1} (P=0.019) decrease in baPWV in controls. In patients with cardiovascular diseases, isoflavone intake in the 2nd and 3rd tertile were independently predictive of reduction in baPWV by 283 cms^{-1} (p=0.003) and 341 cms^{-1} (p=0.002), respectively. Results of the clinical trial are presented in Table.
Conclusion: The level of isoflavone intake is markedly lower in patients with high cardiovascular risks. Isoflavone is independently predictive of improved vascular function and atherosclerotic burden in both healthy and diseased populations. It also reverses endothelial dysfunction and improves peripheral circulation in patients with cardiovascular diseases.

Table: Randomized Controlled Trial - Mean Changes in Surrogates of Vascular Function

	Isoflavone	Placebo	P-value
Flow-mediated Dilatation (%)	1.56 ± 2.6	0.08 ± 3.2	0.026
Nitroglycerine-mediated Dilatation (%)	1.07 ± 4.93	1.18 ± 5.44	0.926
Mean Carotid Intima-media Thickness (mm)	-0.06 ± 0.51	0.06 ± 0.37	0.398
Ankle-Brachial Index	0.01 ± 0.099	0.05 ± 0.070	0.034
Brachial Ankle Pulse Wave Velocity (cms^{-1})	65.8 ± 235.1	39.1 ± 297.2	0.652

ABSTRACTS

Abstracts Presentation (Oral):

9.

Incremental Predictive Values of Vascular Surrogate Markers for Coronary Risk Prediction

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Introduction: In patients (pts) with low-intermediate risk, the use of Framingham Risk Score (FRS) may not allow accurate prediction for the presence of coronary artery disease (CAD). Recently, different vascular surrogate markers have been used to increase the accuracy of coronary risk prediction. Furthermore, the potential role of using FRS together with different vascular surrogate markers in Chinese remains unclear.
Methods and Results: We determined the FRS and measured flow-mediated dilatation (FMD), carotid intima-media thickness (IMT), ankle brachial index and arterial stiffness in 98 male pts with documented CAD (mean age 66 ± 10 yrs) and compared them with 50 male controls (mean age 55 ± 11 yrs). The presence of carotid plaque was defined as IMT ≥1.5 mm. Among different vascular markers, a lower FMD (≤4.75%) and the presence of carotid plaque were independent predictors of CAD (P<0.05), and provided the best diagnostic accuracy with area under curve 0.74 and 0.75. Furthermore, the use of FRS in conjunction with a low FMD and the presence of carotid plaque can achieve a significantly better CAD risk prediction than FRS alone (area under curve 0.85 vs. 0.79, P<0.05).
Conclusions: Incorporating measurement of FMD and carotid plaque burden with FRS significantly improves the accuracy in predicting CAD, and hence should be considered as additional investigations to improve coronary risk assessment.

10.

To Drive or Not After Acute Myocardiac Infarction – The Fact?

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Objectives: The study aims at (1) identifying the rate and time frame of resumption of commercial driving among subjects with history of Acute Myocardiac Infarction (AMI) after attending the cardiac rehabilitation program in Tung Wah Hospital (TWH) and (2) to investigate on the extent of threat of this specific group of commercial drivers on the road safety and the general public.
Methods: A retrospective study was conducted to identify the number of subjects who were professional driver before their AMI and the proportion that had resumed commercial driving after finishing cardiac rehabilitation in TWH from 1994 to 2006. For those who had resumed commercial driving, they were invited to answer a questionnaire via telephone contact, which consisted of 10 questions addressing the time frame of resumption of commercial driving, type of vehicle, symptoms during driving and their coping mechanism, traffic accident encountered.
Results: Among 1793 subjects being reviewed, 63 subjects were professional drivers before the onset of AMI. They were all male with mean age at 61.4 (range 36-82; SD 11.02). About 84% commercial drivers operated passenger and large passenger vehicle while the rest (16%) drove commercial vehicle. Rate of resumption of commercial driving was 20.6%. The response rate of questionnaire was 84.6%. Their mean age was 54.92 (range 45-66; SD 6.75). The duration since onset of disease to resumption of driving ranged from few days to 6 months (mean=2.5 months). All resumed to operate the same type of vehicle. About 77% operated passenger and large passenger vehicles while only 7.7% operated commercial vehicle. Only 10% reported they had experienced episodes of mild chest discomfort that did not interfered with driving. No one reported they had been involved in any forms of traffic accident after they resumed commercial driving.
Conclusion: The present analysis reviewed that the rate of resumption of commercial driver after AMI was relatively low. Age, which skewed towards retirement range, might be a detrimental factor. For the group who had resumed commercial driving, they were relatively younger and still at their working age. This compelling factor might lead to early resumption of commercial driving than recommended by the guideline in Hong Kong. Though the rate of symptom recurrence during driving and traffic accident were low, we had to be cautions to conclude that their threat on road safety was not significant as these data reflected merely the response of the subjects. So, further prospective study in this area were deem necessary for evidence base practice.

ABSTRACTS

Abstracts Presentation (Oral):

11.

Lifestyle and Blood Lipids: Short-term Benefits

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Objectives: This study shows the effects of a five-day healthy camp on lowering blood lipids, important markers of coronary heart disease. Study participants are members of our health overseas trip. We promote a balanced lifestyle that includes a low fat high fiber vegetarian type diet, exercise, stress management, and relaxation activities. The diet is totally free of fat, except for nuts and peanuts, but less than 10% of the calories from fat. Participants have about 2 hours of low intense exercise per day.
Methods: A sample of blood tests was conducted in the first day and another in the last day of the camp (five days later). Participants were selected by having a cholesterol level over 150 mg/dl (3.87 mm/l). Means were compared using the one sample independent t test.
Results: Total cholesterol was statistically significant ($p<0.001$) lower in the second test by 27 mg/dl (0.67 mm/l); Triglycerides were statistically significant lower ($p<0.001$) by 41 mg/dl (0.46 mm/l) $p<0.001$, LDL cholesterol was statistically significant lower ($p<0.001$) by 16 mg/dl (0.41 mm/l), and HDL cholesterol was statistically significant lower ($p<0.001$) by 4 mg/dl (0.10 mm/l) after the five day program.
Conclusions: Even in a short term, lifestyle changes can produce results in the lipid profile. Other two aspects of the study are that it is possible to change the environment and provide good, palatable and nutrient-rich food with a vegetarian diet, and that health behaviors can be promoted using entertainment activities. This is authentically what can be called "health tourism".