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Guest Editorial

Cardiac Rehabilitation Service in Hong Kong

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Introduction

Cardiac rehabilitation has been defined by World Health Organisation1 as the sum of activities required to influence favorably the underlying cause of the disease, as well as to ensure the patients the best possible physical, mental and social conditions so that they may be by their own efforts, preserve or resume when lost, as normal a place as possible in the community. Metaanalysis of cardiac rehabilitation programme had demonstrated a 25% reduction in cardiovascular mortality.2,3 The survival benefit cannot be attributed solely to exercise training. The reduction in cardiovascular mortality in multifactorial intervention was 26% and exercise intervention only was 15%. This reduction in mortality approaches that resulting from pharmacologic management following myocardial infarction with beta-blocking agents.

The cost effectiveness of these programme had also been demonstrated by various studies4-7 including improvements in exercise tolerance, symptoms of angina, lipid management, smoking cessation, psychosocial well-being and stress management. Structured cardiac rehabilitation programmes had developed in the past eight years to provide service to patients in Hong Kong. However, the provision of services is limited by resources and priority has always been given to acute services instead of the more cost effective rehabilitation and prevention programmes.

Patient Categories

Rehabilitation of coronary heart disease patients manifesting as acute myocardial infarction,8 angina, following revascularization procedures9 with coronary artery bypass graft surgery (CABG)10 or percutaneous transluminal coronary angioplasty (PTCA)11 and stenting are recommended for secondary prevention. The application of cardiac rehabilitation services to patients with heart failure,12 cardiac transplantation, valvular surgery and other procedures including implantable devices has also gained increasing recognition as its benefits and safety are documented. Rehabilitation exercise training in patients with heart failure and moderate to severe left ventricular systolic dysfunction is recommended to attain functional and symptomatic improvement.

Components of Cardiac Rehabilitation

Patients derive benefits from the different components13 of the programme such as exercise training; education; counselling; behavioral modifications; psychosocial assessments and interventions; and occupational assessment and vocational counselling. Thus the interdisciplinary approach with different professionals contributing to the management of the patient should be the ultimate goal.

Programme Models

Traditionally, cardiac rehabilitation programme consists of four Phases.

The in-patient Phase I rehabilitation should be
available in all hospitals treating cardiac patients. Early mobilization and exercise to minimize deconditioning; education of the patient and relatives on the disease knowledge, diet, exercise and risk factor should be instituted to facilitate early discharge and coping at home. Commencement of the programme immediately when the patient is stable in the acute or subacute hospital is most effective in post-myocardial infarction patients.

The Phase II, outpatient phase with supervised exercise; relaxation therapy, counselling and reinforcement of the knowledge and life style modification for secondary prevention are best provided and coordinated at the cluster level. Case management model and home care should be provided to patients with special needs such as elderly patients or patients with heart failure.

The Phase III and IV rehabilitation could be provided by the cluster based rehabilitation centres or community organizations for maintaining the patients' learned healthy lifestyle and promote the patients and their families' confidence in taking care of the cardiac patients in the community.

Cardiac rehabilitation is a multi-disciplinary process that crosses traditional boundaries. Holistic care of the patient with provision of services by hospital specialties, cluster based rehabilitation centres and community organizations has to be coordinated to enhance efficiency and continuity.

**Resource**

Cardiac rehabilitation is a low technology treatment with minimal costing. Although cardiac rehabilitation programme in large centres described in literature required substantial resources in funding for buildings, equipment and staff; such programmes are beyond the reach of most hospitals and may not be convenient for patients. However, the Phase I programme which require minimal costing but has the most effective impact on the patients. Hospitals in UK and other places including Hong Kong had developed cardiac rehabilitation programmes in which existing hospital resources were utilized. Building reconstruction or adaptation and additional equipment required depend on the existing facilities. Designated space for prevention and rehabilitation should be provided in the cluster based centres for the outpatient phases.

**Personnel**

In Hong Kong the medical profession, especially the cardiologist had been taking an active role in advocating and conducting these programmes. The 13 programmes in public hospitals have cardiologists, nurses and physiotherapists involved. General physicians and rehabilitation specialists also participated in several programmes. Occupational therapist, social worker, psychologist, dietitian, pharmacist and community nurse participated in various extent in providing the services. The role and function of the different team members can be partially supported by other disciplines with the interdisciplinary approach.

Dedicated personnel need to be in place for coordination and effective implementation of the cardiac rehabilitation programmes. Such roles are most appropriately taken up by the nurses, social workers or occupational therapists trained in cardiac rehabilitation. The administrators or healthcare planners of the community should recognize that appropriate funding is needed for establishing and running such cost effective programmes. Furthermore, training and accreditation of the staff with provision for development should be made available.

**Recommended Service in Hong Kong**

Acute and subacute hospitals treating cardiac patients should provide the Phase I rehabilitation in the in-patient phase. Early contact at the in-patient setting and integration into the clinical pathway is the ideal mode for initiating an effective programme.

The programme design also has to cater for individualized needs and has to be convenient to enhance adherence. A clinical pathway for the management of cardiac patients should be formulated to facilitate the recruitment of patients that have the potential to benefit from the cardiac rehabilitation programme.

Co-ordination to Phase II programme based at institutions should be available at each cluster level for optimal utilization of resources and patient convenience. With the limited resources, the provision of Phase II
rehabilitation service in designated centres with appropriately trained staff may be more cost-effective. A triage pathway should be developed in each Hospital cluster to facilitate the referral of cardiac patients from the inpatient phase or the outpatient clinic to the cardiac rehabilitation centre.

Phase III and IV services are community based and long term rehabilitation in the community could be provided by the collaboration of the cluster based centres. A linkage with the community organizations providing the services in the community level is therefore very important. In Hong Kong, the Community Rehabilitation Network and the patient support group "Care for Your Heart" have been taking the leading role in community rehabilitation. Partnership and collaboration should be established with these community groups to enhance reintegration of the cardiac patients back to the community and re-enforcement of the concept of secondary prevention.

Although the inpatient, outpatient and community cardiac rehabilitation services are deficient at present, this essential component of contemporary management of cardiac patients has to be developed.

**Future Development in Hong Kong**

Effective secondary prevention measures controlling the cardiovascular risk factors had been well established in comprehensive cardiac rehabilitation programmes. Yet there are still many areas that need further research. For example, the suitability or benefits of using local popular exercises such as Tai Chi for training in cardiac patients; the optimal intensity of education, counselling and training programme and the most cost effective format for different category of cardiac patients.

The cardiac rehabilitation programmes in Hong Kong should be available to patients who could benefit from the different aspects of the rehabilitation program including counselling, education, exercise training behavioral therapy and secondary prevention measures. Alternatives to group based programme include case management model, home based model and mailed education with feedback etc. could be considered. The role of primary care physicians in providing and reinforcing the primary and secondary prevention service need to be defined.

With an aging population, the load of cardiovascular disease will be escalating in the coming years. Integration of primary and secondary prevention measures into Cardiac Prevention Centres to combat Ischaemic Heart Disease should be the direction for control of this epidemic of the twenty-first century.

**References**