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Review Article On Aspects Of Cardiac Rehabilitation.

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Abstract:
Cardiac rehabilitation is defined as "Program is designed to limit the physiologic and psychological effect of cardiac illness and also teaches the importance of life style changes to prevent recurrence of cardiac events." Cardiac rehabilitation is a comprehensive treatment given in patients with cardiac disease providing elements of health education, counseling for cardiovascular risk mitigation,Physical exercise, and stress-management. There is increasing evidence that cardiac rehabilitation decreases mortality, morbidity and unplanned hospital admission, as well as improvements in exercise ability, quality of life and psychological well-being. Cardiac rehabilitation (CR) in patients with coronary artery disease is an important, albeit underutilized, therapy. The goal of this study was to determine the relation between CR completion and resource utilization and mortality. Discussion of this analysis focuses on what constitutes cardiac rehabilitation, as well as examples its effects on cardiovascular mortality, morbidity and quality of life.

Key words: Cardiac rehabilitation, Knowledge, Components of cardiac rehabilitation.

INTRODUCTION

Cardiac rehabilitation (CR) is an evidence-based approach that combines patient understanding, health behavior changes, and preparedness to reduce patients' side effects of cardiovascular disease prevention [1].

BACKGROUND OF THE STUDY

Cardiac rehabilitation (CR) is an important and underutilized therapy for coronary artery disease patients. The purpose of this study was to establish the relationship between CR completion and mortality and resource
use[1].

DEFINITION

Cardiac rehabilitation is an extensive program which prepares the patient for a total, vital and productive life within the limitations that cardiac diseases impose on him. This is, in other words, the method of restoration and sustaining a patient at their optimum physiological, psychological, educational and social status. In his Daily Living Activities (ADL), patient transitions from a period of total dependency to a period of independence [2].

CARDIAC REHABILITATION AIMS

Maximize physical , psychological and social functioning to maintain a safe life for people with heart disease and fulfilling life. Incorporate and support activities that could Minimize the probability of cardiac attacks and other illnesses. Facilitate and shorten the healing time following an acute heart event. Encourage strategies to achieve mutually agreed preventive targets. Creating and maintaining long term skills improvement in actionsAnd auto-management. Promoting the correct use of health and community services including compliance with prescription medical items and clinical advice [3].

PURPOSES OF CARDIAC REHABILITATION

1. . To raise quality of living. This is achieved by:

a) The progressive fitness and physical activity plan.
b) Patient and family awareness about the cause,prevention, and coronary heart disease diagnosis.
c) Helping the patient to accept the limitation on him by the illness and helping him to make adjustment to the changes demanded by his occupational goals and lifestyle.
d) Maintenance of psycho-social integrity.

2. For raising the patient's life expectancy. This is achieved through:

a) Determining and changing risk factors for coronary heart disease
b) Optimizing the medical/ surgical treatment [2].

REHABILITATION TEAM WHO ARE INVOLVED TO PROVIDE CARE

The physician, The nurses in ICCU, ward and clinics, Physical and occupational therapist, Medical social worker, Clinical psychologist, Vocational and rehabilitation counselor, Dietician,Family member[3].

INDICATION AND CONTRAINDICATION OF CARDIAC REHABILITATION

Indication areMedically stable symptoms of infarction after myocardioid, stable angina, Coronary artery bypass grafting, Compensated cardiac failure, Heart transplantation, Cardiomyopathy, Peripheral vascular disease, Sudden cardiac death syndrome.Contraindications are Unstable angina, Systolic blood pressure more than 200mmHg and diastolic blood pressure more than 100mmHg, Severe aortic stenosis, Uncontrolled ventricular arrthymias, Uncontrolled tachycardia, Recent embolism, Active pericarditis or myocarditis [4].

PHASES OF CARDIAC REHABILITATION

1) **PHASE I (Period of acute illness):-** The patient is admitted to the intensive coronary care unit. It is the period of acute illness and usually lasts for 3 to 5days. The patient is in a stage of complete dependence on the nursing services.
2) **PHASE II (Period of less acute stage):-** The patient is usually located in the intermediate /self care units. The patient is convalescing from the acute stage of illness. This period lasts from 1 to 3 weeks. At the end of this period the patient is discharged from the hospital.
3) **PHASE III (Period of convalescence):-**This is the period of convalescence and the patients are at home. This period lasts from 3 to 8 weeks after an uncomplicated myocardial infarction. The patient is usually on self care.
4) **PHASE IV (Maintenance phase):-**The patient has returned to work r prior activity[2].

NEEDS OF CARDIAC REHABILITATION

A cardiac rehabilitation system is designed to help many people of all ages with heart problems. Cardiac attack including disease of the coronary artery (CAD), angina, heart failure, etc. Cardiac surgery, including coronary bypass surgery (CABG), percutaneous coronary surgery (PCI),

including coronary angioplasty (balloon angioplasty), and stenting, valve repair, or internal defibrillator (ICD) pacemaker surgery [2].

COPMONENTS OF CARDIAC REHABILITATION

A. Heart healthy diet and body weight management:

1. Increase intake of foods of plant origin.
2. Decrease intake of high fat dairy product.
3. Reduced intake of saturated fats and cholesterol
4. Rich foods such as butter and ghee.
5. Avoid concentrated sugar , root vegetables
6. Sweet potato, ice cream or chocolate.
7. Check body weight every week to help ideal weight. According to height and sex of the individuals [5].

B. Education for habits for-tobacco smoking and alcohol intake:

1. Educate patients that cigarette smoking about has about twice the risk of having heart attack.
2. Educate patients that nicotine increases heart rate and cause heart attack.
3. Educate patients that high alcohol intake can lead to coronary artery disease [6].

C. Education for stress management:

1. Develop an interesting hobby that can form a good outlet for tension.
2. Spend some time indoor and outdoor games.
3. Develop the habit of relaxing through Exercise.
4. Learn to accept situation and People that may be source of stress.
5. Discuss problem with those who can create an insight and solve them.
6. Avoid any activity that causes Stress.
7. Practice meditation for 20-30 minutes daily [2].

D. Counseling for exercise:

1. Cardiac rehabilitation can improve cardiovascular health by both jogging and other physical sports, including biking, swimming, and rowing.
2. Patients can also do strength training (for example, lifting weights) to boost muscle fitness [7].

E. Associated conditions for hypertension and diabetic mellitus:

1. Maintain a desirable body weight stop smoking
2. Avoid taking alcohol in large quantities.Reduce salt intake (the intake of salt be less than 5 gm per day). Avoid salty food.
3. Exercise regularly
4. Take adequate rest and sleep; have 6 to 8 hours of sleep at night.
5. Practice relaxation
6. Avoid self medication (including contraceptives) Patient with diabetes mellitus should take adequate treatments and bring diabetes under control [8].

F. Follow up care:

1. The patient should have a regular physical check-up.
2. Take medication properly
3. The name of the drug
4. The dosage and time of intake
5. Expected effect of the drug
6. The side effects and toxic effects to be reported
7. Directions for the patients to get best out of the drugs. The precautions to be taken in the administration and storage of the drugs [2].

BENEFITS OF CARDIAC REHABILITATION

1. Reduction of lifestyle related risks.
2. Improve functional abilities.
3. Increased awareness of the mechanism and methods of disease prevention.
4. Improved ability to perform tasks in everyday life.
5. Increased awareness of heart disease.
6. Increased self-esteem, and increased confidence.[9].

7. Improved commitment to safe lifestyle choices. Patients with a confirmed exertion diagnosis of exertion angina.
8. The advantages of quality of life for patients are also accomplished by enhancing symptoms (Loss of chest pain, exhaustion anddifficult or labored breathing), reducing fatigue or increasing overall sense of psychosocial well-being [10].

REQUIREMENT FOR CARDIAC REHABILITATION-

The minimum facilities a service needs for cardiac rehabilitation are:

1. Separate office space, and heart recovery facilities.
2. An Education Space complete with chairs, television, DVD player, and a variety of booklets and DVDs. The size of the educational room will depend on the number of participants in the educational sessions (patients, friends, and staff) and the services available.
3. It is suggested that the combined heating area and exercise room will be around 300m2
4. Air-conditioned workout room.
5. Patients will also have access to the toilet, shower room and dressing room, and drinking water supply [11].

SAMPLE FORMATION OF REHABILITATION CARDIAC

1) UPWARM

Objective: Prepare body for workout by slowly and comfortably increasing the heart rate

Effects:

1. Take blood off good tissues
2. Increase muscle temperature and muscle speed and allows the mind to relax
3. Prepares the muscle for the time spent in the ROM exercise. Must include pulse elevation movements (5 minutes) e.g. on-the-spot marching, walking, low level period accompanied by stretching the major muscle groups (5 minutes) accompanied by more pulse elevation activity [12].

2) **MAIN CLASS**

1. It seems most famous for group rehab circuit training. Patients can adopt interval or continuous approach to the circuit, depending on the CV status and functional power.
2. Separate stations are created, and participants spend a fixed amount of time at each aerobic station (30secs-2mins) before going to the next station that could be rest or active rehabilitation in the form of resistance training targeted at different muscle groups.
3. Curriculum vitae (CV) variable individualization can be accomplished by varying; time spent at each CV station, strength (increase resistance, speed or ROM), rest period, overall time of the class [12].

3) DOWN TO COOL

1. 0 Last minutes.
2. Goal: to restore the body to its state of repose.
3. Movements with reducing strength and relaxed relaxation with major muscle groups should be integrated.
4. Necessary due to increased hypotension risk.It takes longer for older hearts to return to the periods of rest. Raised anxiety Increases the risk of arrhythmias during exercise right after exercise. [13].

4) HEALTHY AND SAFETY

1. When patients are usually unwell, symptomatic or clinically dangerous upon admission, they do not exercise. Fever / Systemic acute sickness. Unresolved / Angina Uncontrolled. Rest BP > 200mmHg and diastolic > 110mmHg.
2. Important lowering of symptomatic BP hypotension. Rest / uncontrolled tachycardia (> 100bpm).Uncontrolled atrial or ventricular arrhythmias. New / recurring signs of breathlessness, lethargy, palpitations, dizziness.
3. Dysfunctional heart disease, uncontrolled / dysfunctional diabetes.
4. Need to note the below.
5. Fast access to hospital and/or emergency care services.
6. Each facility is checked and maintained regularly.

7. Added drinking water and glucose if needed. Entry from and to the premises, emergency exits, toilets and change rooms, ventilation, surface and room space tested for suitability [14].

ASSESSMENT AND OUTCOME MEASURE

1. Defines and measures the efficacy of an activity programme.
2. Providing objective patient reviews. Make evidentiary procedure simpler.
3. Testing can be used both as a reference indicator and as a predictor of exit outcomes.
4. During exercise.
5. Respiration rate.
6. Bodyweight.
7. Body mass index.
8. Functional capability measures.
9. Check shuttle walk. Stage check for Chester. A patient who does have a stress test.
10. Electrodes are fastened to the chest of thepatient and linked to an electrocardiography (ECG) machine.
11. The electrocardiography measures electro activity of the heart.
12. Using a blood pressure cuff, the patient monitors the blood pressure while walking on a treadmill [14].

A number of articles from GBD Studies reflect on related cardiac problems globally[15-18]. Gawande and Kirnake assessed cardiac involvement in acute pancreatitis and its effect on morbidity and mortality[19]. Taksandeet. al. assessed the effect of phototherapy on cardiac function in neonates with hyperbilirubinemia[20]. Related studies were also reported by Arya et al.[21], Choudhari et al [22], Kasatwar et al.[23] and Lalwani et. al.[24-26].

CONCLUSION

Cardiac rehabilitation is a comprehensive treatment that provides elements of health education, cardiovascular risk mitigation counseling, and physical activity and stress managementin patients with heart disease. In addition to improving exercise capacity, quality of life and psychological well-being, there is growing evidence that heart rehabilitation is reducing mortality, morbidity and unplanned hospital admissions, and is now being recommended in international guidelines. The research focuses on cardiovascular recovery and examples of its impact on cardiovascular mortality, morbidity and quality of life.

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