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Effectiveness of supervised exercise based cardiac rehabilitation versus unsupervised exercise training following coronary artery bypass graft surgery

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Background: Cardiac Rehabilitation (CR) is a multidisciplinary program that includes patient's education on the importance of exercises and reduction of risk factors by combined measures of medical, surgical, nutritional, exercises, lifestyle modification and psycho-social adaptations. Cardiac rehabilitation includes primary and secondary prevention that includes essential component of graded exercise training with growing demand on individualized training methods to enhance the benefits like reducing morbidity, mortality, risk factors and enable them to have near normal quality of life. In spite of the benefits in supervised training and limitations such as adherence, recent trends of evidence based practice and younger age of surgical candidacy entrusts to explore the benefits of simple and structured supervised exercise training in Indian settings. Hence this study was taken up to prescribe Supervised Exercise Training during Phase II Cardiac Rehabilitation of post Coronary artery bypass graft Surgery (CABG) patients.

Objectives of the Study: To find out the effectiveness of supervised exercise based Cardiac Rehabilitation over unsupervised conventional home program with exercise training on functional capacity, Quality of Life, Physiological determinants of Cardio-Respiratory function, Physical determinants of Cardio-Respiratory function. Also to determine the safety and feasibility of outpatient exercise training program and the adherence to Phase II Cardiac rehabilitation (Exercise training).

Methodology: A Randomized Control Study: All the patients who underwent Coronary artery bypass grafting (CABG) (n-114) at the super specialty center were screened for inclusion in this study. Before discharge, all the patients in both the group were given routine care with counseling to continue self-monitored exercise. After meeting the inclusion criteria, candidates were randomized into study group (intervention of 12 weeks supervised exercise based Cardiac Rehabilitation) and Control groups having conventional home based self-monitored exercise training. The subjects in study group attended individualized training sessions, under supervision as per 'AACVPR' (American Association of Cardio Vascular and Pulmonary Rehabilitation), 'AHA' (American Heart Association) and 'ACSM' (American College of Sports Medicine) protocol for 12 weeks. The control group received counseling to continue self-monitored exercise at home as practiced conventionally. The functional capacity was tested by Six Minute Walk Test (SMWT) for patients in both groups in accordance to ATS (American Thoracic Society) protocol at the time of discharge and after 12 weeks follow up. Quality of life, using WHO QOL BREF questioner, Physiological and Physical determinants that influenced on outcome and barriers for participation in the study were noted.

Conclusions: Patients, who attended the supervised exercise program study group, had a significant improvement in their functional capacity in comparison to control group having conventional home based self-monitored program. Physical, Physiological parameters, quality of life improved and in Physiological determinants' like Heart rate, Ejection Fraction and Systolic Blood Pressure had influence on the outcome. The barriers to Phase II CR were problems in commutation, family support and psychological.

Key words: Cardiac Rehabilitation, Phase II, Supervised Exercise Training, Functional Capacity, Coronary Artery Bypass Grafting.

Biography

I am Natarajan Venkatesh (N. VENKATESH) working as Professor in Faculty of Physiotherapy, in Sri Ramachandra University, Chennai – 600 116, India. I have been in clinical and teaching Physiotherapy for the past 25 years. I am PhD scholar. I am working on Influence of Yoga on Autonomic Nervous System. Honor of Awards received: Distinguish Service Award by the Indian Association of Physiotherapists on 23.01.05. ----"Best Teacher Award" (Chosen by Vice Chancellor, The Tamil Nadu Dr. MGR Medical University on 05.09.2011) --- Fellowship Award – 51st by The Indian Association of Physiotherapists 2013 (FIAP).

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