Outcomes in Phase II Cardiac Rehabilitation: A Retrospective Analysis Comparing Participants with CABG to Participants with Non-Surgical Interventions

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Coronary artery disease (CAD) is one of the leading causes of morbidity and mortality in the United States (13).

A sedentary lifestyle is one among the chief modifiable risk factors in the development of CAD.

Physical activity not only aids in the prevention of CAD, but can also help mitigate further damage even after CAD is present (2,3).
Benefits of Physical Activity on Risk Factors

Lowers LDL and triglycerides levels.

Increases HDL levels.

Systolic and diastolic resting blood pressures are reduced (greater reduction is seen in hypertensive patients).

Improved blood glucose tolerance.

Weight reduction.

Increased rates of smoking cessation.
Adults who are unable or unwilling to meet these specific recommendations can still benefit from any amount of exercise, no matter how small.

Studies have documented that improvements in hypertension, glucose intolerance, insulin resistance, dyslipidemia and inflammatory markers were made with continued physical activity, even during weight regain. \(^{(5,6,7)}\)
INTRODUCTION

The benefits of physical activity on cardiovascular health in adults has long been established.

The American Heart Association (AHA) and the American College of Sports Medicine (ACSM) both recommend that adults engage in moderate-intensity exercise training for >30 min/day on >3-5 days/week, or vigorous intensity cardiorespiratory exercise training for >20 min/day \(^{(5)}\).
DEFINITION: The term *cardiac rehabilitation* refers to coordinated, multifaceted interventions designed to optimize a cardiac patient’s physical, psychological, and social functioning, in addition to stabilizing, slowing, or even reversing the progression of the underlying atherosclerotic processes, thereby reducing morbidity and mortality (12)
Phase I: Begins while inpatient after cardiac event
Phase II: Outpatient phase of the program
Phase III: Maintenance
# Components of Cardiac Rehab Program

## Exercise Training
- Improve physical activity
- Improve functional endurance

## Medication Management
- Medication compliance
- Medications/safety counseling
- Recognize adverse effects

## Lifestyle Modification
- Smoking cessation counseling
- Nutrition and dietary counseling
- Stress management
- Psychosocial improvement

## Referral and Follow Up
- Follow-up scheduled physician visits
- Continuity of physical activity
- Continue community and social activities
Schematic exercise training and different modalities

Initial stretching
- Warm up
- Stretching
- Treadmill
- Arm ergometer
- Bicycle ergometer
- Seated elliptical
- Weights/resistance exercises
- Cool down
“Patients with CAD with no prior surgical intervention will benefit more than post CABG patients from an outpatient Cardiac Rehab Program”
• The patients’ exercise data from the outpatient cardiac rehabilitation will be retrospectively analyzed and compared with those from CABG and CAD patients.

• Patients in the CAD group include patients with STEMI, NSTEMI, PCI, and Stable Angina.

• We will look into the data of the patients in CR who were consistent in their rehab program and had a minimum of 18 or more sessions.

• We plan to obtain results from a total of n=50 patients in each group.

• Calculate the mean age of CABG patients and CAD patients.

• The average attendance of sessions for each group.
PRE AND POST EXERCISE RESULTS

PRE AND POST EXERCISE DATA

• The pre and post-6 minute walk test in the CABG group vs. CAD group
• The pre and post exercise tolerance in minutes in CABG group vs. CAD group
• The average metabolic equivalent (METS) in each group will be compared in initial session and terminal session in each modality of exercise
• The pre and post questionnaire of Ferrans and Powers score to assess the psychosocial and overall wellness of individual
STATISTICAL ANALYSIS

- Means test
- Paired t test
CONCLUSION
Currently there are studies that show documented improvements in hypertension, insulin resistance, dyslipidemia and inflammatory markers, with continued physical activity in patients with CAD 6, 7, 8

However our study is primarily focused on quantifying the exercise data comparing CABG and CAD groups.

FUTURE PLAN
• IRB approval
• Data collection
REFERENCES

1. Quantity and quality for exercise for developing and maintaining Cardiorespiratory, Musculoskeletal and Neuromotor Fitness in apparently Healthy Adults.