



REVIEW

Cardiac Rehabilitation: Preliminary Results

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Abstract

We have always thought that patients with cardiac disease are depressed and anxious. The plan for cardiac rehab begins with exercise 3 times a week for 12 weeks. Patients are usually elderly. Typical patients are 60+ years old, inactive but stable, smoke cigarettes, are stressed, hypertensive, and anxious. After several visits the staff for the program report that patients are confident with decreased anxiety and improved exercise ability. Challenges for a rehab program are parking, education and frailness. At present we have no data on outcome (mortality, morbidity) but most measurements are improved after rehab. Outcome data after discharge for rehab program must be obtained.

Keywords: cardiac rehab; depression; exercise

Introduction

Our program began in July 2016 and continues to the present. There have been a total of 150 patient referrals of which 106 were male and 44 were female. The program was initiated by Dr. Jamie Conti [1].

In general the plan for patients rehab is principally exercise, three times per week for 12 weeks.

To be realistic it's important to point out that not all of these referrals returned to the program 3 times per week for a period of 12 weeks.

Patient Population

Our patients were 19–94 with an average age of 65 years in 52 patients. Referrals were from approximately 60 different zip code areas around the University of Florida. Most referrals came from the cardiovascular clinic, some from the inpatient

service and a few from physicians outside the University of Florida.

Patients Entered into the Rehab Program by Clinical Diagnosis (Variable)

Left ventricular assist device–1
Systolic heart failure–17
Heart Transplant–3
Ischemia–11
Coronary artery disease–3
Non ST elevation myocardial infarction–5
ST Elevation MI–10
Old MI–1
Aortic Valve allograft–1

Pharmacologic Therapy

Many of these patients are being treated with pharmacologic agents. This in itself is a concern because of drug-drug interactions. Certain drugs e.g. **SSRI's** may cause arrhythmias or hypotension, or even bleeding associated with ASA or clopidogrel ingestion; **TRICYCLICS** may cause QT prolongation and may precipitate arrhythmias;

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SNRI's which may increase serotonin and norepinephrine and cause hypertension [2].

Who does Cardiac Rehab?

Cardiac rehab is accomplished by a cardiac rehab physiologist, several nurses and other rehab personnel available to evaluate and rehab cardiac patients 3 times a week for a period of 12 weeks.

Typical Patient

A typical patient is one of age 60+ years and male, inactive, but stable, patient who smokes, is stressed, hypertensive, has bad nutrition habits, and most patients with a chronic cardiac condition are depressed or anxious and have a lot of concerns about their ability to function in society as they did in the past.

The personnel who staff the cardiac rehab program present the patient with questionnaires to rate quality of life, depression and anxiety and nutrition as well as education of what they would like to accomplish and what cardiac knowledge they have about their own position. Staff then determines what resources are available to help the patient and the patient is seen 3 times per week which is far more than what is usually done. After a few rehab sessions with the staff, I'm told by the staff, that patients become confident, that they can exercise at a higher level than when they first appeared in the unit. The staff also notes improvement in attitude and decrease in anxiety.

If cardiac rehab does what the staff thinks it does, it has accomplished a great deal in the individual patient and may prolong life.

Exercise and Decreasing Depression

There is very little in the literature about the relationship of cardiac rehabilitation and decreasing depression or anxiety in patients with chronic CV disease.

However, Blumenthal and colleagues reported that "exercise is often related to improvements in depression" [3].

Some Unique Challenges for any Rehab Program

Parking: Anyone who works in the university hospital knows that there are two issues that are concerning to faculty. The first is salary and the second is parking. However we have solved this latter problem for our patients since they have easily obtainable valet parking that is free to the patient undergoing rehab.

Education (why rehab?): In my opinion, the patient is in rehab in order to improve their overall function so that they can return to the functionality or at least close to the functionality that was present prior to their cardiac disease state.

Frailness (a major problem in the elderly): In a recent publication about patients ages 60–98 (average age 72 at baseline) with multiple and widespread physical impairments. Investigators are concerned whether rehab will help with balance, mobility, strength etc., and improve clinical outcomes in these patients. Only time and more research will tell [4].

The Following are the Parameters that we Measure in our Program

Gender
Weight
Waist circumference
Blood Pressure
Depression Scale
Anxiety Scale
Quality of life index
Nutrition
Duke activity score index
6 min walk test
Sit to Stand test
Ejection Fraction

Preliminary Retrospective Results

In this analysis, which was retrospective, the number of patients with results prior to rehab did not necessarily have similar measurements post rehab. The number of patients who did have results are indicated by parentheses.

There were 34 males and 18 females in the program. All of the following measurements are average.

Weight; Pre-193.5 (52) Post-193.3 (52)
 Waist-Pre-40.2 (52) Post-40.2 (47)
 Blood Pressure; Pre 126.9 (51) Post 106.7 (51)
 The Phq9 depression scale: pre 8.64 (49) post; 3.97 (45)
 The Gad7 (anxiety scale): pre 3.4 (47); post 2.4 (45)
 The RYP nutrition score: pre 52.3 (49); post 59 (45)
 The Duke Activity score index (DASI): pre 27.1 (49); post-37.5 (45)
 The number of Mets that was associated with the DASI score pre 2.9 in (50); Post 5.1 (49).
 The 6 min walk test: pre 136 (52); post 1629 (51).
 Sit to stand: pre 11.1 (52); post 15 (50).
 Ejection Fraction; pre 41(40); post 43(19).

It was pointed out in a recent publication in JACC by Kubzansky et al. that rigorous intervention trials

are needed to assess whether psychological well-being-promoting programs can improve cardiovascular outcomes [5].

At the present time we have no data on outcome, so the next step in our process is to follow up our patients for outcome after discharge from the program.

Comments by Rehab Patients

The following comments were submitted to staff by rehab patients

1. The staff members were friendly and helpful.
2. The staff members explained the program and answered any problems that I had.
3. The referral process to cardiac rehab was timely.
4. The rehab area was neat and clean.
5. The parking for the rehab clinic was adequate.
6. I feel like I met all of my goals during the program.
7. I was satisfied with the overall program.

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