SPECIAL SERIES Preventive Cardiology

A Retrospective Single Center Experience

Utilization of Phase II Cardiac Rehabilitation in Veterans Administration Patients

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Our survey showed that phase II cardiac rehabilitation attendance led to better adherence to exercise amongst veterans in the long run, underscoring the importance of rehab programs.

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Abstract

Cardiac rehabilitation (CR) is underutilized across the United States. Reported national average varies from 14-35% after acute myocardial infraction and 31% after coronary artery bypass grafting surgery. No study to date has examined the utilization of CR in eligible veteran population. In this retrospective study, computerized veteran medical records at a single Veterans Administration (VA) hospital were screened between January 1, 2006 and December 31, 2009. Patients who met the inclusion and exclusion criteria were surveyed telephonically and asked a series of questions relating to delivery and utilization of phase II CR. Data was collected using a pre-printed questionnaire and patient responses were number coded.

Utilization rate of phase II CR in veterans was noted to be 21%. Common reasons reported for underutilization of CR included time and distance problems, orthopedic- and stroke-related muscle weakness and lack of motivation. Participation in Phase II CR led to better adherence to exercise long term. Also, 65-70% of the veterans expressed interest in a tailored home based CR program. CR is underutilized in eligible veterans. Compliance could possibly be improved if the veterans were offered a tailored CR program.

Introduction

Coronary artery disease (CAD) patients with recent acute myocardial infarction (AMI) and patients who undergo coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI) are ideal candidates for cardiac rehabilitation (CR). Several studies have shown the benefit of CR in improving mortality, morbidity and CAD risk factor control.[1] Despite its proven benefit, CR programs are underutilized across United States, with only 14 to 30% of eligible patients participating. Elderly, non whites, females and

patients with medical co-morbidities receive much less CR.[2,3] Also, cost, time and accessibility issues are other impediments for the utilization of CR in United States.[4] Various home-based CR programs may improve CR utilization and have shown to be as effective as center-based programs. No study till date has examined the utilization of CR in the veteran population. In this study we examine the utilization rates of phase II CR in eligible veterans at a single VA center and evaluate factors affecting CR participation.

Methods

Harry S. Truman Memorial Veterans' Hospital (HSTMVH) computerized patient records were queried from January 1, 2006 to December 31, 2009 to derive a list of 682 potential participants meeting the inclusion criteria of one of the following diagnosis: 1) Stable angina; 2) AMI (ST elevation or non-ST elevation) followed by CABG; 3) AMI (ST elevation or non-ST elevation MI) followed by PCI or (4) AMI followed by medical therapy.

After eliminating readmissions and patients without recent coronary event or revascularization, 313 veterans were identified during the 2007-2008 time period. After distributing these into four groups, 132 veterans were mailed recruitment letters for study participation of which 47 agreed to participate in the study. The study survey included a series of questions relating to delivery and utilization of phase II CR programs. Data was collected by four surveyors using a pre-printed questionnaire and patient responses were number coded in this institutional IRB approved study. Data analysis involved simple percentage calculation and was done using Microsoft Excel 2007.

Results

We surveyed a total of 47 veterans in whom phase II CR was indicated. Of the 47 veterans, three had stable CAD, 12 presented with AMI and underwent CABG, 27 presented with AMI and underwent PCI and five presented with AMI and were managed medically. In this survey, 27 (57.4%) admitted to or remembered being offered CR while the remaining 20 (42.6%) claimed to have not been offered phase II CR. Of those who remembered being offered CR, only 10 (21% of the total surveyed) chose to participate and the remaining 17 did not. Thus, we analyzed the study data based on the three groups:

Group 1: Those offered and chose to participate

(n=10) Out of 10 in this group seven completed phase II of CR and continue to exercise at the time of the survey (70%). First reason cited by people who couldn't complete or did not continue to exercise were orthopedic problems and/or stroke related muscle weakness. Median annual household income of veterans in this group was 20 - 40K and the common education level was high school or GED.

Group 2: Those offered and chose not to participate

(n=17) Out of 17 in this group, only three (~18%) reported to continue some form of exercise at the time of the survey. The common first reasons cited for not participating in CR in this group were: a) already exercising (n=5); b) lack of time (n=3) and c) lack of motivation (n=4). Median annual household income of veterans in this group and common education level was 20 - 40K and high school or GED respectively, same as group 1. If offered, 12 out of 17 (~71%) in this group said that they would be interested in some form of home based tailored CR.

Group 3: Those that did not remember being offered

(n=20) Of the 20 veterans in this group only two (10%) reported indulging in some form of exercise related activity at the time of survey. When asked what would prevent them from participating in a center based CR program if it was offered, the common first reasons cited were: a) orthopedic/bone issues; b) lack of motivation and c) a combination of time distance problems and stroke related muscle weakness. Median household income in this group of veterans was 20 - 40K as well and the common education level was some form of college attendance with/without degree. Again, 13 (65%) expressed interest in home based CR if it was offered.

Discussion

In 2001, 19 states and the District of Columbia included questions in the state-based Behavioral Risk

Factor Surveillance System (BRFSS) survey regarding receipt of cardiac rehabilitation services following a heart attack. The findings indicated that less than a third of heart disease patients had participated in phase II CR.[3] Suaya et al reported underutilization of cardiac rehab in Medicare beneficiaries (those > 65 years of age) to be as low as 14% in AMI and 31% in CABG patients.[2] However, to our knowledge no study has looked at phase II CR utilization in veterans in particular. In our survey the utilization rate of phase II CR in veterans was 21%, much lower than the above reported national average of around 30%. This is despite HSTMVH being a referral VA for cardiac interventions and surgery as well as having dedicated staff and CR program with automated referral of eligible patients to CR.

In our survey, the common reasons for underutilization of CR in veterans appeared to be time and distance issues, orthopedic and stroke-related muscle weakness and lack of motivation, which in turn could be the result of the two aforementioned issues. The current practice of center based cardiac rehab with its associated hassles of limited availability in small remote areas, travel to bigger centers, parking etc., further adds to the problem and decreased compliance. Several other factors have been reported responsible for underutilization of CR in the elderly.[2] We studied socioeconomic status and education level and did not find any significant difference between the groups in this regard.

To circumvent the problems associated with center based CR programs and improve utilization several alternative home-based programs have been developed and used around the globe. A recent meta-analysis looked at 12 such studies and concluded that, in stable CAD patients home based CR programs were as effective as center based programs in improving the health and quality of life-related outcomes.[5]

Conclusion

Our survey showed that phase II CR attendance led to better adherence to exercise amongst veterans in the long run, underscoring the importance of rehab programs. Underutilization is therefore a concern and raises the need to develop ways and means to improve compliance among veterans. Home based programs are as effective as center based programs and individually tailored CR programs could potentially improve this situation. As over 65% of the veterans in our survey expressed interest in a rehab program if it was home based, these novel solutions may improve CR use, functionality and survival for our veterans.

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Acknowledgment

This report was supported with resources and the use of facilities at the Harry S. Truman Memorial Veterans Hospital, Columbia, Missouri

Disclosure

Funding Source: VISN 15 Veterans Administration Research award to Dr. A. Chockalingam. MM