**Literature Review II- Cardio-Pulmonary Disease and Elderly Population**

PHYT 710

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In the article *The Impact of High-Calorie- Expenditure Exercise on Quality of Life in Older Adults with Coronary Heart Disease* in the Journal of Aging and Physical Activity, Pope et al. compare higher volume low-intensity exercise to standard protocol cardiac rehabilitation in helping elderly cardiac patients loose weight. This was a randomized control trail that placed the subjects either in the high-calorie-expenditure (HCE) exercise program or the in a more traditional cardiac rehabilitation program. The goal of the study was to compare these two groups to see which group would loose more weight and if the weight loss was associated with improved quality of life as well as improved psychosocial status. To support the basis of the study the authors sited past studies that state that even a 5-10% decrease in weight has been shown to result in improved quality of life. They site the American College of Sports medicine recommendation that older adults should exercise thirty minutes a day five times a week. They go on to note that no study has compared the frequency and intensity of activity in weight loss with this population.

There were seventy-four overweight to obese patients selected to be in the study. The mean age was 64 years old and there were 60 men and 14 women. Inclusion data included: diagnosis of coronary artery disease, BMI > 27 kg/ m2, and waist circumference > 110 cm for men, and 88 cm for women. Exclusion data included: patients with diabetes mellitus, and patients who were severely deconditioned. The mean BMI was 32. Three subjects dropped out of the study in the first month.

The subjects were randomly assigned to either the HCE group or the traditional cardiac rehabilitation group. Both groups went to one class a week taught by a dietitian. Their daily-prescribed goal was 500 kcal less than predicted calories necessary for maintenance. The traditional cardiac rehabilitation group met at the testing center for the first four months of the study. The traditional cardiac rehabilitation group did 25-40 minute sessions at 65-75% of their peak VO2 three times a week. They did 25 minutes on a treadmill, followed by 8 minute of either cycling or rowing. The HCE groups’ goal was to expend between 3000 and 3500 kCal in exercise. This group’s exercise was longer in duration, 45-60 minutes, at a lower intensity of 50-60% peak VO2. They met 5 times a week. This group walked more and they only did exercises at the center for the first month.

The subjects’ height and weight were measured at baseline and at five months. Other measures taken at baseline and five months were physical activity via a Caltrac uniaxial accelerometer, Quality of life Psychosocial and physical function questionnaire, MacNew Heart Disease Health-Related Quality-of-Life Instrument, Self-Efficacy for Exercise scale, Social-Support Scale, the Perceived-Stress Scale, the SF-36 questionnaire, as well as the Geriatric Depression Scale. At baseline there were no differences between the groups in the psychosocial questionnaires.

The results of the study showed that subjects in the HCE group lost more than two times the weight of the patients in the cardiac rehabilitation group. There were greater changes in the HCE for the better on the questionnaires overall than in the other group. There was more positive change in the HCE on the SF-36 outcomes for physical function, and social function. The HCE group also reported a noted increase in enjoyment of exercise that was different from the other group. This is an important finding because it indicates that patients will comply with a home exercise program. This was a sound study overall, however there could have been some improvements. They did not describe how the subjects were selected. If the investigators and subjects had been blinded and the whole experiment had been conducted at the center it would have strengthened the evidence.

1. Pope L, Harvey-Berino J, Savage P, et al. The Impact of High-Calorie-Expenditure Exercise on Quality of Life in Older Adults with Coronary Heart Disease. *J Aging Phys Act*. 2011;19:99-116.