Less is more

In lifestyle-related risk factor management in secondary prevention of coronary artery disease

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Citation for published version (APA):
Referral to a commercial weight management program in patients with coronary heart disease: A pilot study in the Netherlands

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Journal of Cardiopulmonary Rehabilitation and Prevention, 2015
INTRODUCTION

Overweight and obesity are associated with an increased risk of cardiovascular morbidity and mortality. (1, 2) Unfortunately, the prevalence of overweight and obesity is increasing globally. (3, 4) In the EUROASPIRE studies, the prevalence of obesity in patients with patients hospitalized for coronary artery disease rose from 25% in the first survey (1995–96) to 32% in the second (1999-2000), and 38% in the third (2006–07). Weight loss is associated with reduced cardiovascular risk factors, diabetes mellitus and adverse events. (5, 6)

Guidelines and cardiac rehabilitation programs recommend that patients be encouraged to increase their physical activity, to avoid smoking, to adopt healthy food choices and to pursue a normal body weight. (7) However, in contrast to drug therapies, long term lifestyle changes, including weight reduction, have proven to be very difficult to accomplish, even after a life threatening cardiac event. (8, 9)

A wide range of interventions has been explored, with limited and often temporary success. (10) Weight loss is particularly resistant, with minimal reductions and frequently in fact an increase in weight during follow-up. A commercial weight management program (Weight Watchers®) has shown promising results in primary prevention. (11) However, it has not been tested in patients, in whom weight loss is desirable to prevent recurrence of disease. In a pilot study, we investigated the impact of participation in this program on body weight, in obese patients admitted with coronary heart disease on top of usual cardiac rehabilitation program.

METHODS

From July 2011 to November 2012 all patients admitted to the coronary care unit of the Diakonessen Hospital, a medium size general hospital in the Netherlands were screened for eligibility by the treating physician or nurse. Patients aged >18 years were eligible if they had been diagnosed with an acute coronary syndrome (12), attended the local cardiac rehabilitation program and had a body-mass index (BMI) of >30 kg/m². Exclusion criteria were congestive heart failure NYHA class III or IV, a life expectancy less than 3 years or inability to participate in the program. The study was approved by the institutional review board and all patients gave written informed consent.

The commercial weight management program (Weight Watchers®) included a weekly 30 minute in-hospital meeting with an experienced coach who received no additional training for this study. The program, which was otherwise identical to the usual commercial program, promotes a hypo-energetic, balanced diet, increased physical activity,
and group support. Weight loss goals are self-selected by the patients with input from the coach, addressed to 5-10% weight reduction of the initial weight.

The outpatient cardiac rehabilitation program starts 2-3 weeks after discharge and consists of a consultation with a specialized nurse, followed by a physical fitness program and psychological support when appropriate. As part of the general program a dietician provides advice about healthy food and weight reduction in one hour group sessions.

The cardiac rehabilitation program continued for 10-14 weeks and during this period attendance at the commercial weight management program was free of charge for the participants. After completing the cardiac rehabilitation program patients could continue with the commercial weight management program at a reduced price.

The primary outcome of the current study was weight change at 14 weeks, at the end of the cardiac rehabilitation program. Secondary parameters were weight change after a longer time period if patients continued with the commercial weight loss program.

RESULTS

Almost 200 patients were screened for eligibility and 45 patients were included. Reasons for not participating were lack of motivation, doubts in the ability to complete the 14 weeks program or prioritizing smoking cessation above weight reduction.

A total of 45 patients (23 males) started the program. Mean age was 59 years (range 43-73 years). Ten patients (7 men) discontinued the weight loss program before the end of the cardiac rehabilitation program. The reasons for drop out were not provided.

Thirty-five patients completed the commercial weight loss program. Of these, 32 (91%) patients lost weight, 2 patients remained unchanged (changes less than +/- 0.5kg) and 1 patient gained 0.6 kg weight. The mean BMI at baseline was 35.3 kg/m². Mean weight change after 14 weeks was -5.8 kg (range + 0.6 kg to -15.4 kg), this was an average of 5.6% of the initial weight. The target of 5% weight reduction (5.1 kg) was achieved by 20 patients (57% of the 35 patients who completed the program). (figure 1)

Twenty-seven patients continued with the commercial weight loss program after the cardiac rehabilitation program ended, at their own expense, at reduced rates. The mean follow up was 34 weeks and mean weight change was -9.1 kg (range 0.0 kg to 23.0 kg). Three patients achieved an optimal BMI (≤25kg/m²).

DISCUSSION

We report the first series of patients hospitalized for coronary artery disease, who were referred to a commercial weight management program (Weight Watchers®) for medical
reasons. Participation from 14 weeks up to 18 months resulted in significant weight loss in the majority of patients. Although these patients were selected by motivation and by the ability to participate in the program, the proportion of weight loss is significant and promising.

In secondary prevention studies for patients who suffered an acute coronary syndrome, lifestyle modification, is very difficult to achieve, including the goal of 5% weight loss in patients with overweight. Earlier interventions, with the focus on patient education, individual counselling by a specialized cardiovascular nurse or a multidisciplinary approach have not resulted in significant improvements in lifestyle. (9, 13, 14) Apparently, in spite of specific training in weight management, cardiac rehabilitation staff is unable to utilize the patient’s full potential for change. In our pilot study we offered participation to a commercial weight management program on top of regular cardiac rehabilitation. More than half of the patients who completed the program achieved a 5% loss of their initial weight. Based on our observations and a recent review, this intervention may be more effective than current weight management education as part of regular secondary prevention programs. (6)

In primary prevention, weight loss programs have been studied more extensively. In a randomized controlled trial with 423 apparently healthy overweight participants, Heshka et al. showed that a 26 weeks commercial weight management program resulted in significant more weight than participants in the control group, who only received brief counseling about healthy food choices. After two years, a mean weight loss of 5 kg, was maintained for participants who attended more than 78% of the group session.
(15, 16) A randomized controlled trial in overweight participants at increased risk of atherosclerotic disease found that dietary components from popular diets, like Atkins, Ornish, Weight Watchers and Zone, can reduce weight under practical conditions. There were no significant differences between the diets in the amount of weight loss. Attrition rates varied from 35% to 50% at 12 months, an increased adherence was associated with more weight loss. (17) These findings are consistent with our pilot study, where longer participation in the program was associated with greater weight loss.

**Limitations**

This pilot study has several limitations. First this is a single center, uncontrolled study with a small sample size. The patients participating in the trial were selected by their motivation. Second we did not collect data on diet and physical activity and other cardiac risk factors. Third the weight management program was free of charge for participants for 14 weeks, which limits the generalizability of our findings.

**Conclusion**

Referral of motivated participants to a commercial weight loss program may offer a clinically useful intervention for weight management in overweight patients with CHD. The program is widely available and may offer a new perspective on weight management in secondary prevention. Based on these promising findings, a large multicenter randomized trial is currently underway in the Netherlands (the RESPONSE 2 study, Dutch Trial Register, NTR3937)
REFERENCES


