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New psycho-pedagogic approach to obesity treatment: A 5-year follow-up

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ABSTRACT

Objective: The aim of the present study was to evaluate the body weight evolution in obese patients admitted for a 2-week residential program and followed-up on ambulatory basis, as well as to evaluate factors having impact on weight evolution after 5 years.
Methods: Thirty-nine obese patients participated in a 2-week structured interdisciplinary weight loss program, involving individual and group therapies, and including physical activity, nutritional education and standard cognitive-behavioral techniques. Patients were then followed-up regularly by their general practitioners for 5 years.
Results: After 5 years, 33 subjects completed the study. Seventy percent of the patients lost weight or maintained their weight loss. Total score for dietary structure, eating behavior disorders, dietary surveillance and weight management strategies, as evaluated by a validated questionnaire, was significantly lower in the weight loss group (22.4 ± 4.3) as compared to maintenance group (24.4 ± 6.1, $p < 0.05$) and regain group (29.7 ± 4.0, $p < 0.01$). Patients who lost weight presented a more important follow-up on long-term weight management ($p < 0.05$), a better dietary results ($p < 0.01$) as well as more physical activity ($p < 0.05$) that the regain group.
Conclusion: The present study demonstrated that an initial multidimensional and multidisciplinary in-hospital program with a consecutive long-term ambulatory follow-up may lead to a significant weight loss (55%) and/or weight maintenance (15%).
Practice implications: A multidisciplinary and well-designed initial treatment and long-term follow-up program is mandatory for obesity management.

1. Introduction

The long-term maintenance of weight loss remains an important challenge in the treatment of obesity. Among the several strategies, programs evaluating weight loss maintenance with a more than 5 years follow-up are rare. Unfortunately, and to our knowledge, there are no accepted rules to guide interventions promoting long-term behavior and lifestyle modifications in order to achieve weight maintenance.

Sjostrom et al. evaluated a short and long-term effectiveness of a 4-week residential program for primary health care patients to control obesity based on lectures and group discussions as well as practical sessions in smaller groups. The patients were then followed-up by their general practitioners. At 5 years, they showed a mean weight loss of 5 kg [1].

Lisspers et al. developed a multifactorial lifestyle behavior change program for rehabilitation and secondary prevention of subjects with coronary artery disease [2]. The program commenced with a 4-week residential stay, with the focus on health education and the achievement of behavior change in major lifestyle areas. During the year of follow-up, a systematic maintenance program included regular contact with a nurse. Self-reported quality of life improved and there were significant improvements in blood lipids, exercise capacity and body mass index after 1 year [2].

We have previously evaluated the long-term effectiveness of a 6-week in-hospital stay, for obese subjects with a mean BMI of 40.7 ± 0.7 kg/m^2, on weight changes. During the 6 weeks, patients lost an average of 7.6 ± 0.4 kg and, 5 years later, 25.5% of the patients had lost a further 11.9 ± 1.8 kg [3]. These results confirm that an initial residential in-hospital program could lead to long-term weight loss even without a regular and specific follow-up.

A randomized study [4] was designed to compare the effects of treatment condition (diet only, exercise only, and the combination of diet and exercise) on the success of weight loss and maintenance by overweight, free-living adults 2 years after enrollment in a behavior modification program. The results suggested that dieting is associated with weight loss followed by regain after treatment

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ends, whereas exercise alone produced smaller weight loss but better maintenance [4].

For the maintenance of weight loss on long-term, a global approach associating a cognitive-behavioral therapy coupled to a diet and a physical–activity is necessary [5]. In an ambulatory program intended for patients with coronary artery disease and with lifestyle modification approaches (diet, physical–activity, tobacco stop, group support), a consequent weight loss of 5.8 kg was maintained at 5 years [6]. In this same study, the control group followed by a general practitioner and without lifestyle interventions, showed a weight loss of 1.4 kg.

Heshka et al. compared weight loss and health benefits achieved and maintained through self-help weight loss vs with a structured group program [7]. They showed that weight loss of participants in the structured group was greater than in the self-help group at 2 years (-2.9 kg vs -0.2 kg, $p < .001$). This may reflect the beneficial support of the group and the fact of having a structured program [8,9].

Finally, pharmacological treatment is of interest in the treatment of obesity and weight loss maintenance. However, it has been shown that the combination of medication and group lifestyle modification resulted in more weight loss than either medication or lifestyle modification alone [10]. The results underscore the importance of prescribing weight loss medications in combination with, rather than in lieu of, lifestyle modification.

Thus, an initial program consisting in a group approach and a follow-up protocol are factors of success, taking into account the fact that obesity must absolutely be understood as a serious risk factor for several diseases and must profit from a regular follow-up.

The aim of our study was to evaluate the body weight evolution in obese patients previously admitted for a 2-week residential program and followed-up on ambulatory basis during 5 consecutive years.

2. Materials and methods

Thirty-nine obese patients (BMI range 35–42 kg/m^2) who were previously admitted to the Service of Therapeutic Education for Obesity, Diabetes and Chronic Diseases in the University Hospitals of Geneva for a 2-week hospitalization were enrolled in the study. After this structured and multidisciplinary educational program, patients were followed-up on an ambulatory basis for 5 years. The study protocol was approved by the local ethical committee.

2.1. Program description

The 2-week structured interdisciplinary weight loss program involved individual and group therapies including physical activity, nutritional education and standard cognitive-behavioral techniques. The physical exercise consisted of 1 h walking in group and 3 h of individual walking per week. The nutritional education was provided by a registered dietician twice a week in group sessions and daily, at each meal time, individually. Nutritional approach was based on a low caloric balanced diet (LCD) of 1200 kcal/day with 30% of fat, 55% carbohydrates and 25% proteins, divided into 3 meals and 3 snacks. The behavioral therapy consisted of 10 sessions dealing with issues of self-control, cognitive restructuring reinforcement and relapse prevention. Moreover, patients participated in 5 sophrology sessions for stress management.

After the 2-week residential program, patients continued the follow-up on an ambulatory basis by their general practitioners or family physicians who had all previously worked in our service and were trained in the field of therapeutic patient education. They are all specialist in internal medicine and/or endocrinology. The 5-year follow-up consisted of monthly consultation the first and second year and every 3 months during the last 3 years (36 visits over 5 years).

At 5 years, patients were assigned to 1 of 3 groups according to the body weight evolution: 1. weight loss group (patients who lost >2.5% of initial body weight), 2. maintenance group (weight variations ±2.5%), and 3. regain group (patients who regained >2.5% of initial body weight). At the end of the 5 years follow-up, patients completed questionnaires in order to evaluate different nutritional and psychological aspects.

2.2. Evaluation of diet, eating behavior and weight management strategies

A previously designed questionnaire was used to assess dietary structure, eating behavior disorders, dietary surveillance and weight management [11]. It was validated for obese patients and was previously used to assess the prognosis of weight loss management [3,12]. The 42 items were divided into 3 topics.

2.2.1. Dietary structure and binge eating disorder (BED)

Dietary structure was assessed by means of questions asking whether the patients regularly eat 3 meals per day, and whether they indulge in episodic snacking. The DSM-IV diagnostic criteria were used to assess and classify BED, anxiety and depression [13]. The maximum score for this module was 6 points. Three additional points were given depending on the severity of the BED.

2.2.2. Dietary surveillance and weight management

Weight management was defined as the ability of patients to maintain or decrease their initial weight loss. It includes a dietary survey of the daily consumption of fat, candies, refined carbohydrates and alcohol. The dietary survey was based on diaries, dietician interviews and questionnaires. Any follow-up dietary program and regular exercise for more than 45 min 3 times per week were also recorded. Physical activity was evaluated by a validated questionnaire [11]. The number of dinners in restaurants and accepted/declined invitations to eat with friends were also itemized. The number of hobbies and/or socio-cultural activities was used to assess behavioral changes. The maximum score for this module was 20 points.

2.2.3. Psychosocial difficulties

The severity of anxiety and depression symptoms was defined on the basis of the DSM-IV criteria [13]. Psychosocial difficulties were defined by the severity of professional stress, tiredness, lack of professional interest, unemployment and the presence or otherwise of hobbies. Family problems, divorce, mourning, conflicts and loneliness were considered on the basis of their severity and defined using Holmes' scale [14]. Obesity-related complications were also evaluated. The maximum score for this module was 8 points.

2.3. Statistical analyses

The data are expressed as mean ± SEM and were analyzed using the StatView 4.0 software package. A p-value of < 0.05 was considered statistically significant. One-way ANOVA with Fischer post hoc testing was used for comparisons of means between different groups. Multiple regression analysis (body weight evolution over 5 years as dependent variable) was used to identify the key factors influencing weight loss or regain.

3. Results

3.1. Weight evolution

From the total number of 39, 33 patients have completed the follow-up with both nutritional and psychological evaluations at 5