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ORIGINAL RESEARCH

Nonalcoholic fatty liver disease: a cohort study focusing on treatment response to nutritional counseling

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BACKGROUND: Nonalcoholic fatty liver disease is the leading cause of liver pathology. The mainstay of management is weight loss. Our aim was to evaluate responses to nutritional counseling in long-term patients with this condition.

METHODS: A prospective cohort study with consecutive inclusion of 105 subjects with nonalcoholic fatty liver disease who received individualized low-calories diet counseling (1400 to 1600 kcal/day according to gender) every three months for 24 months. Weight loss of 5% or more was considered as a therapeutic response.

RESULTS: Out of 105 patients, 45 (42.9%) did not return for a second evaluation. Mean age was 55 ± 9 years, 81.6% were women and mean body mass index was 31.9 (23.8–44.9) kg/m^2. Follow-up time was 6.5 (3.2–26.9) months and median appointment number was 3 (2–11). Metabolic syndrome and hypercholesterolemia were more common in women. The number of subjects who lost more than 5% weight was: 5/20 (25%) at 6-months; 3/15 (33%) at 12 months; 3/18 (17%) at 18 months and 4/13 (31%) at the end of follow up. The median body weight loss at 6, 12, 18 and 24 months decreased significantly.

CONCLUSIONS: Adherence to nutritional counseling is poor in patients with nonalcoholic fatty liver disease. Only a very small proportion of patients reached the targeted body loss of weight on long term.

KEYWORDS: hepatic steatosis; lifestyle; low-calories diet; obesity.

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INTRODUCTION

Nonalcoholic fatty liver disease (NAFLD) encompasses liver conditions defined by accumulation of fat in the liver not related to alcohol consumption.[1] It is commonly associated with insulin resistance, obesity, dyslipidemia, type 2 diabetes mellitus and cardiovascular disease. NAFLD ranges from simple hepatic steatosis through lobular inflammation (nonalcoholic steatohepatitis) to variable degrees of fibrosis, cirrhosis and even hepatocellular carcinoma.[1,2]

Currently, NAFLD is the main cause of chronic liver disease in most countries, with an estimated prevalence of 20 to 30% in developed countries. This prevalence increases to 50% in patients with diabetes and to 70% in obese individuals. In the face of the current obesity epidemics, the approach to obesity-related NAFLD is one of the biggest challenges facing us over the next decade.[1,3,4]

Lifestyle modification, encompassing diet, physical activity, and/or exercise related behaviors, is the primary recommended therapy for NAFLD.[5–7] Overall, reduction of liver fat correlates closely with the amount of weight loss.[1,8] However, the paucity of data currently available does not permit to conclude which dietary intervention or type of exercise is more beneficial for patients with nonalcoholic steatohepatitis. Although restricted diets are clinically effective in the short-term, long-term energy intake and weight control is very difficult to achieve in obese individuals.[9,10] There is a lack of studies addressing treatment response to long-term dietetic counseling in NAFDL patients. We evaluated longitudinally the response to standard nutritional counseling adopted in our routine practice in a cohort subjects with NAFLD followed for at least two years.

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MATERIAL AND METHODS

We conducted a prospective cohort study with consecutive inclusion of subjects with NAFLD seen at the Hepatology Outpatient Clinic, Hospital das Clínicas, Universidade Federal de Minas Gerais, Belo Horizonte, from August 2005 to February 2011; these patients were without any previous nutritional approach. Most patients included in the present study were also enrolled in a previous investigation of our team, which aimed to investigate the dietary pattern of NAFLD individuals.[11] The Institutional Committee of Ethics in Research approved this study (ETIC 280/07) and all the participants signed the adequate informed consent form.

NAFLD was diagnosed according to the criteria of the American Gastroenterological Association, which include: hepatic steatosis confirmed by abdominal ultrassonography and/or by hepatic biopsy (indicated according to clinical criteria); absence of other liver diseases (alcoholic liver disease – characterized by the ingestion of alcohol >20 g/day for men and >10 g/day for women, B and C chronic hepatitis, hereditary hemochromatosis, Wilson's disease, alpha-1-antitrypsin deficiency, primary biliary cirrhosis, autoimmune hepatitis, primary sclerosing cholangitis); absence of use of drugs known to cause hepatic steatosis during the previous six months; no exposure to hepatotoxins; no previous gastric or jejuno-ileal bypass surgery.[12] Alcohol use was addressed in at least three different occasions by two physicians and by the nutritionist during the interview. All subjects were submitted to ultrasonography (all performed by the same operator) to assess the presence and degree of steatosis. Steatosis was graded according to intensity, and the diagnosis of NAFLD by ultrasonography was based on standard criteria.[13]

Hepatic biopsy was performed for the differential diagnosis with other liver diseases, in the presence of persistent increased serum levels of the aminotransferases, or according to clinical judgment. Histological analysis was performed according to the routine protocol of the Institution's Department of Pathology and Legal Medicine, which is based on the classification by Kleiner et al.[14]

Anthropometric, clinical and laboratory evaluation

Anthropometric evaluation included body weight and height, body mass index (BMI) calculation, and waist circumference measurement. BMI was used to classify the nutritional state according to the World Health Organization criteria.[15,16] Central obesity was defined by the waist circumference measurement according to the criteria established by the National Cholesterol Education Program's Adult Treatment Panel III (NCEP-ATP III).[16]

Metabolic syndrome was defined according to criteria adopted by NCEP-ATP III, namely the presence of at least three of the following factors: triglycerides equal or higher than 150 mg/dl, high-density lipoprotein (HDL)-cholesterol levels less than 40 mg/dl for men and 50 mg/dl for women, fasting blood glucose equal or higher than 110 mg/dl, arterial hypertension (systolic blood pressure $\geq$130 mmHg and diastolic $\geq$85 mmHg), and central obesity.[16] All tests were performed after a minimum of 12 hours of fasting.

Nutritional counseling and follow up

Nutritional and clinical appointments were scheduled every three months. Anthropometric parameters and laboratory tests were obtained every six months.

At the first appointment, after evaluation of dietary intake by the 24-hour food recall, and a semi-quantitative food frequency questionnaire,[17,18] all subjects received individualized nutritional instructions and orientations on eating habit changes. A patterned food plan was given to all subjects. It comprised a moderate total energy restriction in daily caloric intake (500–1000 kcal/day deficit). Thus, a diet of 1200–1400 kcal/day, for females and 1400–1600 kcal/day, for males was prescribed, targeting reductions of oil and sugar consumption. The patients were also encouraged to practice physical activities at least three times a week. At the three-month visits, the subjects' doubts were answered and patients were encouraged to try to adhere to a gradual loss of weight.

Therapeutic response was defined by weight loss $\geq$5% from baseline, at the end of the study.

Statistical analysis

For statistical analysis we used the software STATA, version 9.0.[19] Categorical data were presented as numbers and percentages, and continuous data were expressed as mean $\pm$ standard deviation or median (range). Frequencies were compared using the chi-square or the Fisher exact test as appropriate. Comparisons for continuous variables were assessed by Student's t-test or Mann-Whitney test, as indicated. Continuous variable changes, during the study, were evaluated by a linear model of mixed effects, adjusted for maximum restricted verisimilitude, with random effect in intercept, using xtmised function from STATA. Through univariate linear regression analysis, the variables that presented a value of $p < 0.25$ were selected for the construction the final multivariate model. Co-variables included in analysis were: gender, age, number of appointments (two, three, four or five) and follow-up (six, 12, 18 and 24 months). Weight loss $\geq$5% from the baseline during the study was evidenced by the Kaplan-Meier curve.

RESULTS

Baseline characteristics of the subjects

The studied population included 105 subjects with NAFLD, 83 (79%) of which were women; the median age was 54.8 years (range: 29–81 years). None of the participants was undernourished, 8 (7.6%) had normal weight, 29 (27.6%) were overweight, and 68 (64.7%) were obese according to BMI classification. High waist circumference was observed in 89 (84.8%) individuals. Only 22 (20.9%) patients reported regular physical activity. Out of the 105 patients included, 60 (57.1%) returned for two or more appointments while 45 (42.9%) abandoned the follow up. A comparative analysis of baseline characteristics between the subjects who attended to two or more appointments and those who abandoned the follow up is described in Table 1. Except for the proportion of patients with arterial hypertension, which was higher among the subjects who persisted with the nutritional treatment, there were no other differences between these groups: median age (54.0 ± 11 vs. 54.6 ± 8 years; $p = 0.12$), baseline weight (78.9 ± 14.3 vs. 81.3 ± 15.0 kg; $p = 0.42$) and waist circumference (102.9 ± 12.4 vs. 102.4 ± 10.9 cm; $p = 0.37$).

The median time of follow up of the patients who remained in nutritional follow up ($n = 60$) was 6.5 (range, 3.2–26.9) months and the median number of appointments was three (range, 2–11). Liver biopsy was carried out in

Table 1 - Comparison between nutritional status, clinical data and laboratory tests at baseline for the NAFLD subjects who attended to more than two appointments vs. those who discontinued nutritional follow up

Variables	Groups		p value
	≥2 appointments n/n (%)	Discontinued n/n (%)	
BMI (kg/m^2)			
Euthrophic	4/60 (6.6%)	4/45 (50.0%)	
Overweight	19/60 (31.6%)	10/45 (34.4%)	0.60**
Obese	37/60 (61.6%)	31/45 (45.6%)	
Enlarged waist circumference	52/89 (58.4%)	37/89 (41.6%)	0.36**
Physical activities	15/22 (68.2%)	7/22 (31.8%)	0.18**
Diabetes mellitus	27/47 (57.5%)	20/47 (42.6%)	0.56**
Arterial hypertension	49/77 (63.6%)	28/77 (36.4%)	0.02**
High triglyceride	40/69 (58.0%)	29/69 (42.0%)	0.49**
High total cholesterol	36/65 (55.4%)	29/65 (44.6%)	0.40**
Glucose intolerance	25/50 (50.0%)	25/50 (50.0%)	0.11**
High LDL cholesterol	47/81 (58.0%)	34/81 (42.0%)	0.40**
Low HDL cholesterol	29/44 (65.9%)	15/44 (34.0%)	0.42**
Metabolic syndrome	49/83 (59.0%)	34/83 (41.0%)	0.30**
High AST	17/27 (61.5%)	10/27 (38.5%)	0.39**
High ALT	11/18 (61.1%)	7/18 (39.0%)	0.46**

n/n: found frequency / number of events with available information; NALFD: nonalcoholic fatty liver disease; HDL: high density lipoprotein. LDL: low density lipoprotein, BMI: body mass index; AST: aspartate aminotransferase; ALT: alanine aminotransferase; *chi-Square test; **Fisher exact test.

22 patients (36.7%). Nonalcoholic steatohepatitis without fibrosis was diagnosed in 13 (59.1%) patients; with fibrosis in five (22.7%); cirrhosis was evidenced in four (18.2%) patients.

Table 2 shows the comparison, by gender, of the baseline characteristics related to the nutritional status, clinical data and biochemical tests. Except for hypertriglyceridemia, hypercholesterolemia and the presence of metabolic syndrome, which were more frequent in the female group, no other differences were found between the genders.

Characteristics of the subjects during the follow up

Gender, age (in years and categorized) and time of follow up were selected as clinically independent variables to be included in the final multivariable models. The response variables were body weight or BMI (linear regression) and lipid profile (logistic regression).

Considering the variable body weight, we observed a mean weight loss of 2.5 kg, 1.5 kg, 2 kg and 1.6 kg, respectively, at six, 12, 18 and 24 months from the baseline ($p = 0.0005$; $p = 0.03$; $p = 0.02$; $p = 0.04$). The final model, in which the response variable was BMI, evidenced a mean reduction of 1.04 kg/m^2, 0.66 kg/m^2, 0.83 kg/m^2 and 0.69 kg/m^2, respectively, at six, 12, 18 and 24 months after the baseline ($p = 0.0005$; $p = 0.02$; $p = 0.02$; $p = 0.04$), as shown in Table 3.

The proportion of subjects who reached a weight loss ≥5% during the study was as follows: at the sixth month of follow up, 20 subjects were evaluated and five (25%) of them had a loss of weight ≥5%; at 12 months, 15 subjects were evaluated and three (20%) of them presented a weight loss ≥5%; at 18 months, 12 individuals evaluated and 3 (25%) reached the targeted weight loss; at the end of the follow up, 4 out of 13 (30.8%) patients in follow up presented weigh loss ≥5%.

Table 2 - Comparison, between gender, from NAFLD patients nutritional status, clinical data and laboratory tests at baseline

Variables	Male (n = 11)		Female (n = 49)		p value
BMI (kg/m^2)					
Euthrophic	0	(0.0%)	4	(8.1%)	
Overweight	5	(45.5%)	14	(28.6%)	0.55**
Obese	6	(54.6%)	31	(63.3%)	
Enlarged waist circumference	9	(90.0%)	43	(87.8%)	0.66**
Age (years)					
< 60	8	(72.7%)	35	(71.4%)	0.62**
≥ 60	3	(27.2%)	14	(28.5%)	
Diabetes	5	(45.4%)	22	(44.9%)	0.55**
Hypertension	8	(72.7%)	40	(81.6%)	0.38**
High triglyceride	5	(45.4%)	35	(71.4%)	**0.01****
High total cholesterol	3	(27.2%)	34	(69.3%)	**0.01***
Glucose intolerance	2	(18.1%)	23	(46.9%)	0.08**
High LDL cholesterol	8	(72.7%)	39	(81.2%)	0.39**
Low HDL cholesterol	4	(36.3%)	25	(52.0%)	0.27**
Metabolic Syndrome	7	(58.3%)	42	(87.5%)	0.02*
High AST	4	(36.3%)	13	(26.5%)	0.37*
High ALT	4	(36.3%)	7	(14.2%)	0.10**

NALFD: nonalcoholic fatty liver disease; HDL: high density lipoprotein. LDL: low density lipoprotein, BMI: body mass index; AST: aspartate aminotransferase; ALT: alanine aminotransferase; *chi-Square test; **Fisher exact test.

Table 4 shows the final models of logistic regression, in which the response variables were hypertriglyceridemia, hypercholesterolemia and low-density lipoprotein (LDL)-cholesterol. Regardless of time of follow up, women showed more hypercholesterolemia when compared to men. There were no changes in serum levels of LDL-cholesterol during the study.

Fig. 1 shows the proportions of patients who attained weight loss ≥5%, during the study period. A higher frequency of weight loss ≥5% was observed during the second semester of the first year of follow up.

DISCUSSION

In this study, we evaluated the response to nutritional counseling focused on weight loss in the treatment of NAFLD, during 24 months. The main findings were: high rate of treatment noncompliance; low percentage of subjects who presented the therapeutic response (weight loss ≥5%); higher proportion of weigh loss during the first year of follow up; and absence of improvement of the clinical-laboratory parameters at the end of study. Most of the subjects presented central obesity, hypertension, hypertriglyceridemia and hypercholesterolemia, conditions frequently associated with NAFLD and components of the metabolic syndrome. There was no difference in baseline clinical-laboratory characteristics between the group of subjects who attended nutritional follow up and the group of individuals who gave up after the first appointment. This aspect suggests that treatment discontinuation, although high, probably was not a source of bias in the study.

Table 3 - Multivariate analysis related to time evaluation of body weight and BMI of patients with NAFLD

	Weight (kg)			BMI (kg/m^2)		
Variables	**Estimative**	**95%CI**	**p value**	**Estimative**	**95%CI**	**p value**
Intercept	78.87	75.44; 82.30	<0.001	32.0	30.80; 33.27	**< 0.001**
Time*						
6	−2.55	−3.93; −1.16	<0.001*	−1.03	−1.58; −0.48	**< 0.001**
12	−1.59	−2.99; −0.19	0.03**	−0.65	−1.21; −0.09	**0.02**
18	−2.08	−3.78; −0.38	0.02**	−0.82	−1.50; −0.14	**0.02**
24	−1.66	−3.27; −0.05	0.04**	−0.68	−1.32; −0.03	**0.04**

NALFD: Nonalcoholic fatty liver disease; 95%CI: 95% confidence interval; BMI: body mass index; *follow up time (months).

Table 4 - Logistic regression: Comparison among gender, age, time of follow up and anthropometry according to laboratory tests from subjects with NAFLD

Variables	n (%)	OR	p value
Hypertriglyceridemia			
Male	5 (45.5)	0.27	0.15
60 years	8 (47.1)	0.29	0.11
Time*		1.00	0.79
6	13 (65.0)	1.22	0.78
12	11 (73.3)	1.32	0.74
18	11 (73.3)	1.82	0.50
24	8 (61.5)	1.15	0.88
weight (kg)		0.98	0.48
BMI		1.00	0.94
Overweight	12 (63.2)	0.47	0.64
Obesity	24 (64.9)	0.60	0.75
Hypercholesterolemia			
Male	3 (27.2)	**0.16**	**0.01**
60 years	11 (64.7)	0.51	0.30
Time*		1.02	0.39
6	13 (65.0)	0.72	0.65
12	12 (80.0)	2.84	0.22
18	10 (66.6)	0.85	0.83
24	10 (76.9)	3.04	0.23
Weight (kg)		0.99	0.83
BMI		1.05	0.41
Overweight	10 (52.6)	0.26	0.35
LDL			
Male	8 (72.7)	0.35	0.11
60 years	12 (70.5)	1.65	0.11
Time*		1.07	0.06
6	14 (70)		
12	14 (93.3)		
18	15 (100)		
24	12 (92.3)		
Weight (kg)		0.98	0.60
BMI	15 (78.9)	1.00	0.96
Overweight	28 (77.7)	0.59	0.77
Obesity	4 (36.36)	0.49	0.70

NAFLD: Nonalcoholic fatty liver disease, OD: odds ratio; BMI: body mass index; LDL: low density lipoprotein.

Lifestyle modifications especially weight loss, physical exercise and cognitive behavior therapy have been recommended as treatment for nonalcoholic steatohepatitis.[1,8,20] However, the best dietary pattern for weight maintenance in patients with NAFLD remains unclear.[1,5] A recent meta-analysis concluded that the design of the studies and the limited information about participant adherence precludes firm conclusions on the effects of diet and physical activity in patients with NAFLD.[5] Studies conducted over 6 to 12 months suggest that 5 to 10% of body weight loss in overweight or obese NAFLD subjects, through low calorie diets and regular physical exercises, is effective in terms of disease treatment.[9,21–26] Although restricted diets are clinically effective in the short-term, long-term energy intake and weight control is a challenge.

This study, aimed to evaluate the approach adopted in our service, showed that only a very low percentage of subjects (25%) reached weight loss ≥5% after the first semester. Moreover, it is worth noting that, at the end of the sixth month, only 20 subjects (from 60) returned for nutritional evaluation; and, among these, only five had satisfactory weight loss. This is in agreement with the results from another trial,[24] which compared intensive life style intervention ILI) vs. diabetes support and education (DSE) based on *Look AHEAD in* patients with diabetes and NAFLD. Those authors observed a weight loss of 8.5 kg for ILI vs. 0.05 kg for DSE, respectively, in a 12-month period. A recent meta-analysis of 49 randomized clinical trials evaluated treatment in NAFLD (30 included patients with nonalcoholic steatohepatitis and 23 had post-treatment histology) also showed a failure in losing weight in more than 50% of the cases. However, most of the randomized clinical trials included in the meta-analyses comprised small numbers of subjects; and in the studies with dietetic intervention, the period of follow up was less than one year.[6] In addition, dietetic intervention varied among the studies. A six-month nutritional intervention study from Brazil (using reduction from 500 to 1,000 kcal/day, with 15% of protein, 55% of carbohydrate and 30% of fat) was successful in 54.8% of patients with NAFLD.[9] Studies from other countries, with higher calorie restrictions, also demonstrated weight losses ≥5% in more than 50% of the cases.[17–20] In our investigation, the smaller restriction in daily caloric intake (1,400 kcal for women and 1,600 kcal for men) may be responsible, at least partially, for the lower success rate we observed; but, our aim was to evaluate the response to the standard nutritional counseling adopted in our routine practice currently indented to produce a gradual and sustained lifestyle change.

A higher proportion of our patients reached the target weight loss during the second semester of the first year. Due to the relatively small sample size in each time period, it was not possible to compare the proportions of cases that reached the desired weight during the different periods of the study. Even given this restriction, a Kaplan-Meier curve allowed us to note that the proportion of subjects that developed weight loss ≥5% was higher during the first year of follow up, especially during the second semester. From this time until month 22, there was weight stabilization. After 22 months, we once again noted the existence subjects who reached the targeted weight loss. However, at 24 months, the number of subjects who stayed in follow up was so small that any analysis and interpretation was precluded.

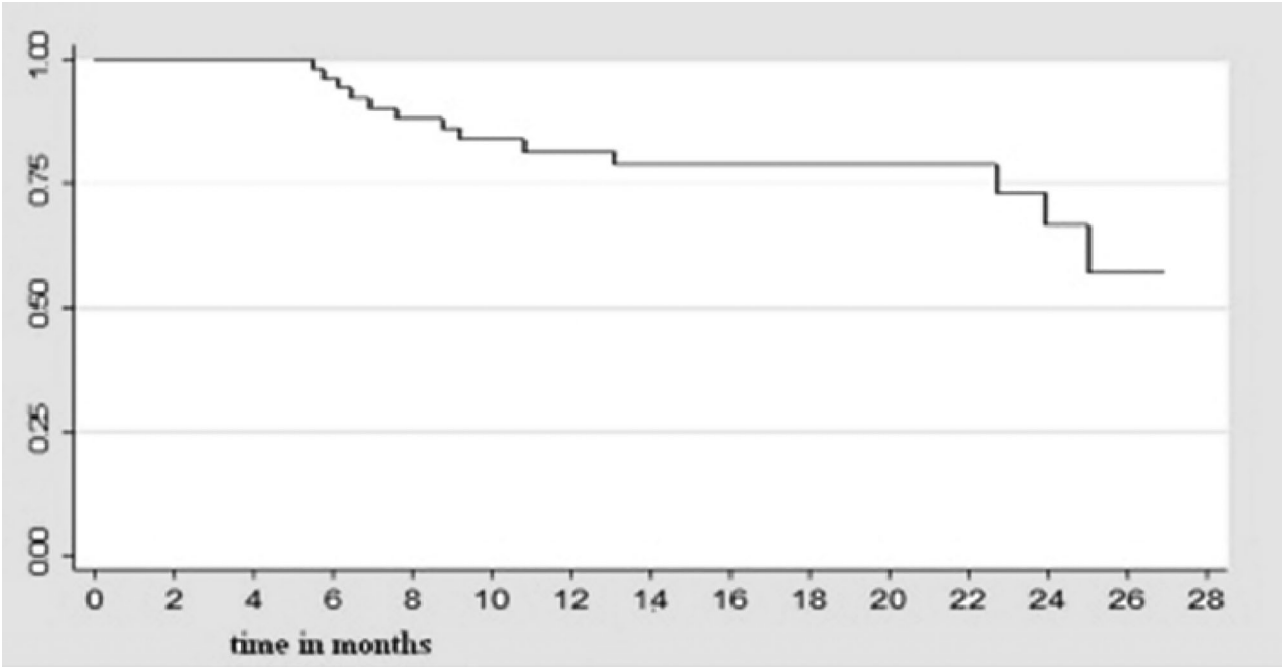

Figure 1 - Proportion of subjects who weigh loss was equal or higher than 5% during study time

The present study showed a very high rate of treatment discontinuation in the beginning of the follow up (57.1%). At the end of study, out of the 60 subjects who attended at least to two appointments, only 13 remained. Thus, we could demonstrate the low adherence to long-term lifestyle change. In agreement with our results, a high noncompliance rate to nutritional counseling (43.8%) was described in 23 Americans overweight subjects who also have nonalcoholic steatohepatitis.[27] A Brazilian randomized clinical trial which investigated the long-term effect of a low-glycemic-index diet in overweight women (BMI 23–29.9 kg/m^2), showed a noncompliance rate of 47.3% during the 18 months of follow up.[28] These data suggest that regardless the baseline condition, changes in lifestyle is a big challenge in clinical practice.

However, studies that evaluated nutritional treatment discontinuation and adherence used different approach strategies and nutritional follow-ups which limits the comparison of the results. In randomized clinical trials, which showed a higher proportion of subject that reached a satisfactory weight loss, the nutritional follow-ups was more frequent and the subjects were more strictly monitored.[22,24,25] A long-term clinical trial showed that, after three years of follow up, the higher appointment attendance was an important predictor of diet and weight maintenance.[23] In our study, the appointments were scheduled every three months, and that may have contributed to reduce patient adherence. In this context, problems in accessing the appointment location faced by our population, particularity because of socio-economic reasons may have negatively influenced the results, although aspects related to socio-economic and educational level of the patients have not been formally investigated. A food registration technique seems to be related to adherence to dietetic prescription.[24] In some investigations, the subjects themselves were responsible for registering their own food intake. This procedure, according to some authors, may contribute to adherence to diet changes.[1,29] In our study, the low educational level of most subjects prevented the use of this tool.

It is well known that weight loss results in aminotransferase reduction,[5,30] improvement of metabolic profile (insulin resistance, blood glucose, cholesterol and triglycerides levels),[5,23,31,32] decreases the levels of inflammatory markers[27] and histological improvement[17] in subjects with NAFLD. However, in our study, no improvement in the laboratorial parameters associated with weight loss was observed probably due to the low proportion of subjects who reached the desired weight loss and the high rate of discontinuation, as previously discussed. Furthermore, most of our subjects presented baseline liver enzymes within the normal limits. In addition, in some clinical trials in which there was satisfactory weight loss with subsequent improvement in the biochemical parameters, the nutritional approach was different form that adopted in our study, as calorie restriction was stricter and the patients themselves were using the food ingestion registration tool. These factors may have possibly influenced the findings. Overall, there is limited detail on adherence to specific aspects of the interventions used in the studies on lifestyle intervention in patients in NAFLD.

Our study has some limitations particularly related to the small number of patients and high rate of treatment noncompliance. Furthermore, we did not stratify our population according to the educational and socioeconomic levels, which are factors that could have influenced the dietary pattern and adherence to nutritional treatment. Finally, and especially because of the high rate of treatment noncompliance, the number of patients at the end of the follow up was too small which limited the analysis of associations between weight loss and laboratorial parameters.

In conclusion, with the nutritional approach used in this study, based on moderate caloric restriction and nutrition individual counseling every three months, only a small part of subjects achieved the desired weight loss and, as a result, this was not followed by improvement of the biochemical parameters, regardless the follow up time. Compliance was a major problem. Of note, adherence to life style changes is difficult to obtain, especially when a long-term intervention is pursued. Given the high prevalence and clinical impact of NAFLD, the development of effective and reproducible lifestyle interventions is crucial. Future studies to establish the most effective measures of producing a sustained reduction in body and liver fat, including objective indicators of adherence, and to investigate alternatives that improve adherence to life style changes in NAFLD patients are warranted.

Conflict of interest statement: there is no conflict of interest.

A DOENÇA HEPÁTICA GORDUROSA NÃO-ALCOÓLICA: UM ESTUDO DE COORTE COM FOCO NA RESPOSTA AO TRATAMENTO COM ORIENTAÇÃO NUTRICIONAL

RESUMO

OBJETIVOS: A doença hepática gordurosa não alcoólica é a principal causa de patologia hepática. Essencial para seu manejo é a perda de peso. Nosso objetivo foi avaliar as respostas a aconselhamento nutricional em pacientes crônicos com esta condição.

MÉTODOS: Estudo prospectivo de coorte com inclusão consecutiva de 105 indivíduos com doença hepática gordurosa não alcoólica que receberam dieta individualizada de baixa caloria (1400−1600 kcal/dia, de acordo com o sexo) e aconselhamento a cada 3 meses, durante 24 meses. A perda de peso de 5% ou mais foi considerada como resposta terapêutica adequada.

RESULTADOS: Dos 105 pacientes, 45 (42,9%) não voltaram para uma segunda avaliação. A média de idade foi de 55 ± 9 anos, 81,6% eram mulheres e o índice de massa corporal foi de 31,9 (23,8−44,9) kg/m^2. O tempo de seguimento foi de 6,5 (3,2−26,9) meses e número médio de entrevistas foi de 3 (2−11). A síndrome metabólica e a hipercolesterolemia foram mais comuns em mulheres. O número de indivíduos que perderam mais de 5% em peso foi: 5/20 (25%) em 6 meses; 3/15 (33%) aos 12 meses; 3/18 (17%) e aos 18 meses 4/13 (31%) no final do seguimento. A perda de peso corporal média aos 6, 12, 18 e 24 meses diminuiu significativamente.

CONCLUSÕES: A adesão ao aconselhamento nutricional é pobre em pacientes com doença hepática gordurosa não alcoólica. Apenas uma pequena proporção de pacientes que atingiu a perda de peso corporal programada a longo prazo.

UNITERMOS: esteatose hepática; estilo de vida; dieta de baixas calorias; obesidade

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