

Significant weight loss in patients with schizophrenia in long-term hypocaloric diet: a pilot study

Perda significativa de peso em pacientes com esquizofrenia na dieta hipocalórica de longo prazo: estudo piloto

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ABSTRACT

Objective: Schizophrenia is associated with increased obesity and morbidity from cardiovascular disease. The aim of the present study was to evaluate changes in weight and body mass index (BMI) of patients with schizophrenia following a long-term nutritional treatment. **Methods:** Retrospective pilot study involving 42 individuals with schizophrenia on nutritional treatment from 2004 to 2010. Medical charts were reviewed after institutional approval and data collection was conducted for weight, body mass index (BMI), age, gender and diet prescription. Weight and BMI were evaluated at baseline of nutrition treatment, after six months, after 12 months and at the time of data collection. **Results:** There was a significant weight loss and significant decreased in BMI when compared each group to baseline ($p < 0.001$). **Conclusions:** We demonstrate that nutritional interventions can promote a significant weight loss in schizophrenia. These results support the importance of nutritional intervention in schizophrenia and bring evidences that weight loss remains along the time.

RESUMO

Objetivo: A esquizofrenia está associada ao aumento da obesidade e morbidade por doença cardiovascular. O objetivo do presente estudo foi avaliar alterações no peso e índice de massa corporal (IMC) de pacientes com esquizofrenia após tratamento nutricional de longo prazo. **Método:** Estudo piloto retrospectivo envolvendo 42 indivíduos com esquizofrenia em tratamento nutricional entre 2004 e 2010. Os prontuários médicos foram revisados após aprovação institucional e coleta de dados para peso, índice de massa corporal (IMC), idade, gênero e dieta. O peso e o IMC foram avaliados no início do tratamento nutricional, após seis meses, após 12 meses e no momento da coleta de dados. **Resultados:** Houve perda significativa de peso e diminuição significativa do IMC quando comparados a cada grupo com o valor basal ($p < 0,001$). **Conclusões:** Demonstramos que as intervenções nutricionais podem promover uma significativa perda de peso na esquizofrenia. Estes resultados suportam a importância da intervenção nutricional na esquizofrenia e trazem evidências de que a perda de peso permanece ao longo do tempo.

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INTRODUCTION

Schizophrenia (SZ) is associated with increased obesity and excess morbidity and mortality from cardiovascular disease (CVD)^{1,2}. Major risk factors, such as smoking and diabetes, combine with inactive lifestyles and poor dietary habits increase future CVD rates³. However, individuals with SZ are less likely to receive adequate metabolic screening and medical intervention compared to individuals without mental illness¹. Furthermore, a large multicenter study - Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) indicate the high likelihood that metabolic disorders, particularly hypertension and dyslipidemia, are untreated in SZ³.

Antipsychotic drug-induced weight gain is a significant side effect associated with the treatment of SZ and causes are unclear⁴, but may result from a positive energy balance, increased on appetite, reduced physical activity, hyperphagia, rather than sedation or an altered metabolism⁵. Second-generation antipsychotic was the most responsible for these side effects⁴. Compared with the general population, SZ patients are at increased risk of weight gain, abdominal obesity, insulin resistance, metabolic syndrome, and CVD^{1,6} and these metabolic risk factors are 1.5 - 2.0 times as common in people with SZ as in the general population⁴. These evidences uphold the need to change lifestyle factors such as smoking status, body mass index, exercise and diet in this vulnerable population.

Behavioral strategies aimed at lifestyle modification have proven effective for weight loss in general population but have not been studied adequately in SZ⁷. Studies with non-pharmacological interventions in SZ seem to have an important effect on weight gain prevention, but the most of interventions have a lower period and showed some non-satisfactory results⁸.

The aim of the present study was to evaluate changes in weight and body mass index (BMI) of patients with SZ following a long-term nutritional treatment.

METHODS

We conducted a retrospective study involving 42 individuals (71% men; 40.93 ± 10.37 mean age in years) with SZ on nutritional treatment from the Schizophrenia Program of a major teaching and public hospital in Porto Alegre, Brazil (Hospital de Clínicas de Porto Alegre - HCPA). Diagnosis of SZ was established according to Structured Clinical Interview for DSM-IV-Axis I Disorders (SCID-I).

The nutritional treatment consisted of a hypocaloric diet prescription, a low-fat diet with diary intake of 20 to 25 kcal/kg/day prescribed by a trained nutritionist with expertise in psychiatric disorders. Patients receive nutritional orientation to reduce sugar and saturated fat intake and increase fruit and vegetables consumption with the objective of correcting

inadequate nutritional choices associated to increase in BMI and associated comorbidities.

A trained nutritionist checked the adherence to diet and reinforced nutritional orientation once a month. This proposal was based on patient nutritional assessment and supported by previous evidences of poor dietary choices and increased caloric intake (including higher fat consumption) in SZ⁹. Medical charts were reviewed after obtaining institutional approval and data collection was conducted for weight, height, BMI, age, gender and diet prescription. We employed repeated-measures analysis of variance (ANOVA) for comparisons weight and BMI at baseline of nutrition treatment, after six months, after twelve months and at the time of data collection.

RESULTS

Mean diet prescription on baseline was 2208.7 ± 242.924 Kcal for men and 1827.27 ± 232.770 Kcal for woman. At the time of data collection, mean length of hypocaloric diet was 46.09 ± 25.73 months. There was a significant weight loss and significant decreased in BMI when compared each group to baseline ($p < 0.001$) (Table 1).

Table 1 – Characteristics of weight and body mass index along nutritional treatment in patients with schizophrenia.

	Nutritional treatment period			
	Baseline	6 months	12 months	Data collection
Weight	86,81±19,12	83,12±17,22*	81,84±17,44*	79,64±18,27*
BMI	30,41±6,32	29,10±5,8*	28,66±5,99*	27,79±6,05*

BMI=body mass index; * $p < 0.001$ when compared with baseline

DISCUSSION

Patients with SZ have increased levels of waist circumference, body fat percentage and overweight. These conditions contribute to an increased mortality rate and the high healthcare costs associated with SZ^{2,7}. Our results support the importance of nutritional intervention in patients with SZ and bring evidences that weight loss remains along the time.

The weight gain can occur in all patients exposed to antipsychotics, independent from type of drug and clinical response, and at any moment along illness evolution. Early detection of changes associated with exposure to antipsychotics, in particular obesity, are essential to the understanding of weight gain². Because of this, physical health management for individuals with severe mental illness such SZ demands a multidisciplinary approach involving psychiatrists, psychiatric nurses, primary care clinicians, dieticians, internal medicine specialists, pharmacists, community health workers¹⁰.

The appetite is regulated by a complex system of central and peripheral signals which interact in order to modulate the individual response to nutrient ingestion¹¹. To increase the knowledge of the interaction of antipsychotic drugs and increase in appetite, more detailed studies are necessary.

An early nutritional intervention can be helpful in these metabolic side effects and our results suggest that a hypocaloric diet can increase the weight loss in SZ and, consequently, can contribute to improve quality of life, self-esteem and life expectancy.

There are limitations in the present pilot study. First, we failed to not include a control group without nutritional orientation and a control group without psychiatric disorder; it is important to confirm these results and compare with the general population. Second, is necessary to evaluate other parameters, such as physical activity, biomarkers and glucose and lipid profile on blood. Finally, additional studies including a large number of patients and evaluating changes in lipids and blood glucose are necessary to reinforce our results.

Our data allowed demonstrating that nutritional interventions can promote a significant weight loss in SZ and prevent antipsychotic drug-induced weight gain. Likewise, a whole-food plant-based diet devoid of refined carbohydrate products may help prevent cardiovascular risk and cancer. We think this can promote a major adherence on medication treatment and improve therapeutic and clinical outcome.

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Place of study: Hospital de Clínicas de Porto Alegre, Porto Alegre, RS, Brazil.

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