

OUR EXPERIENCE WITH TWO BULGARIAN PRODUCTS IN THE MANAGEMENT OF METABOLIC DESEASES

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Introduction

Obesity is a chronic metabolic diseases which leads to many co-morbidities and high prevalence of mortality (6,7). The incidence of obesity and related diseases increases constantly (Fig.1, Fig. 2, Fig. 3) (2). Recently, very much is stressed on the meaning of food supplements in the management of metabolic diseases (3).

Aim

The aim of this study is to present our experience in the management of the metabolic parameters in the obesity with two our products.

Fig.1 Expected increase in the incidence of obesity.

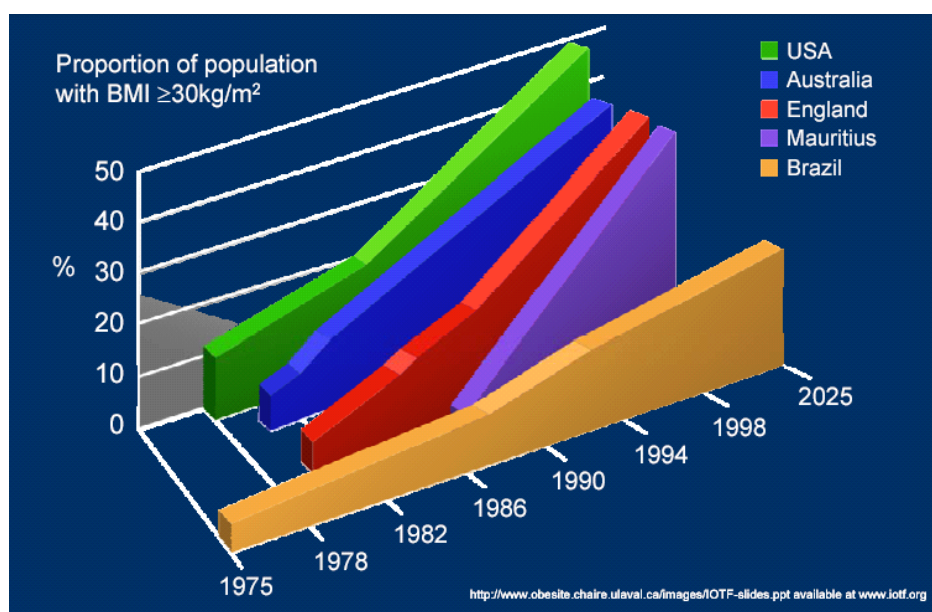


Fig. 2 Overweight and obesity prevalence in schoolchildren (National survey on nutrition and nutritional status of schoolchildren in Bulgaria -1998, 2010-2011) (1)

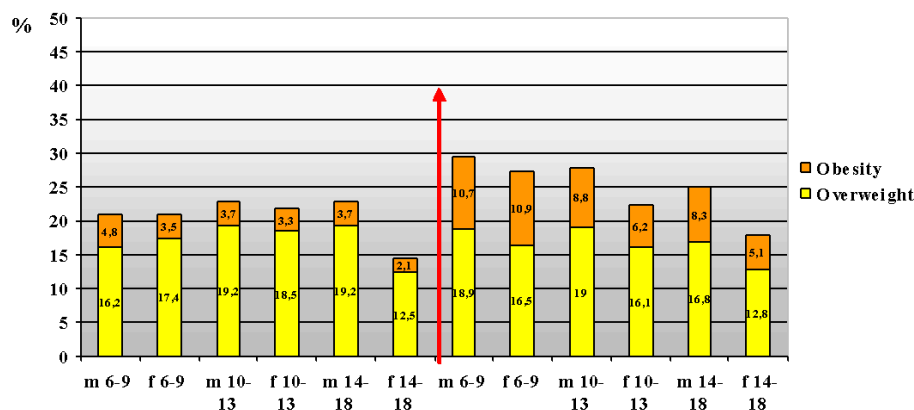
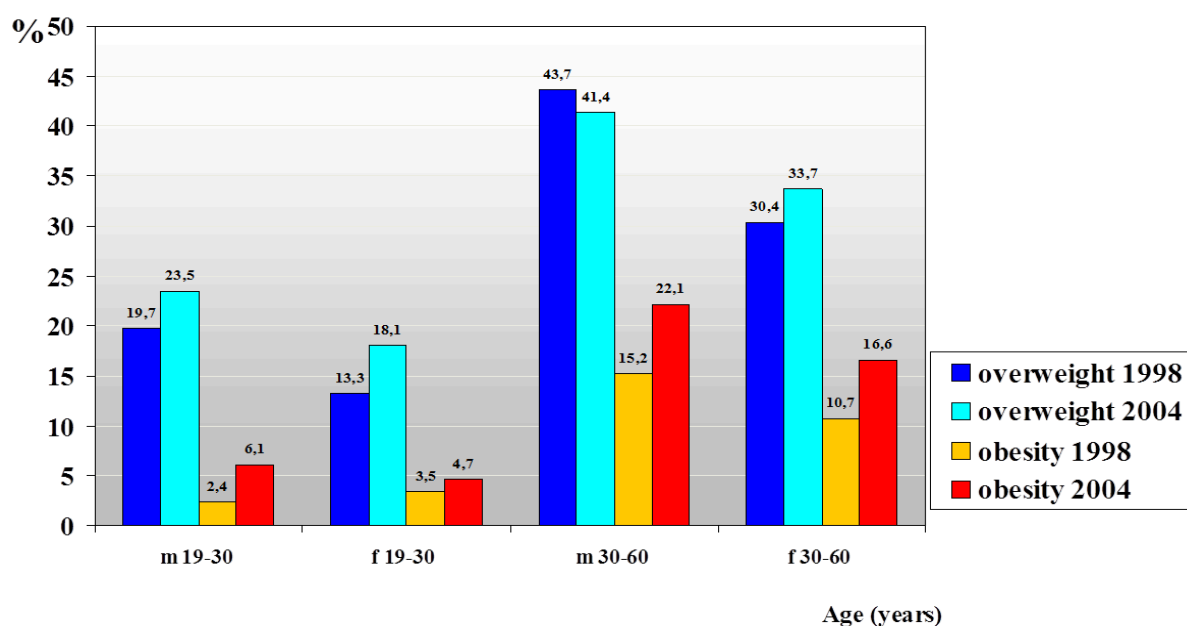


Fig. 3 Prevalence of Overweight and Obesity among adults (19 – 60 years old) National Monitoring of Dietary Intake and Nutritional Status, 1998, 2004(1)(2).



Materials and Methods

A. Alginates

I. Clinical study

A total of 120 obese patients (105 given alginates and 15 placebo control group) with mean age 37,8 years, BMI – 33,7 were followed up for the period of 45 days. Anthropometric indexes were measured as follows: body weight (kg), BMI (kg/m²), waist to hip ratio, fat mass, cholesterol and triglycerides.

II. Experimental Study

18 male rats Wistar with mean age 4 year were randomized in 2 groups – control group and experimental group receiving alginates. After 3 weeks the body weight, cholesterol, triglycerides, blood sugar and ghrelin were measured.

B. Glucomanan

A total of 22 subjects (19 women and 3 men) have participated in the study. The following parameters were studied: mean age was 46.8 years, mean body mass index (BMI) – 33.9 kg/m², mean fat mass (FM) – 42.09%, and mean visceral fat mass (VFM) – 11.4. All subjects received 3 gr of the food supplement with Glucomanan, dissolved in 200 ml water before each meal, and 200 ml water after the meal three times/ daily for a 60-day period. At different time intervals the enrolled subjects underwent anthropometric and bio-impedance measurements with Tanita 420. They didn't receive any other dietary and physical activity advices.

Results

A. Alginates

Clinical study: We found statistically significant reduction of BMI and waist circumference in the group. Total cholesterol, LDL-cholesterol and triglycerides were also statistically significantly reduced in the experimental group. **Experimental study:** The data showed reduction of body weight with 32.5% more compared to the controls. A suppression of ghrelin production was demonstrated.

B. Glucomanan

The food supplement was very well tolerated except in four patients who suffered from flatulence, and mild diarrhea. At the end of the 60-day period a reduction of all studied parameters were demonstrated as follows: mean BMI with 7.3%, mean FM with 4.9%, and mean VFM with 5.3%.

Discussion: The effect of alginates containing food supplement is based on the property of the compounds of alginic acid (organic acid originating from kelp) to produce gel in an acid medium (the gastric juice) which is insoluble and hard to be assimilated in to the organism. (4,5).

Conclusions:

1. Our studies suggest that alginates exert beneficial effects on the metabolic parameters in both animal and human obesity.
2. The use of a food supplement with Glucomanan has a beneficial effect on the metabolic health in obese adults.

References

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