

Effects of a Synergistic Food Supplement Based on Probiotic Microorganisms on “Lipid Accumulation Product” in Overweight-Obese Adults


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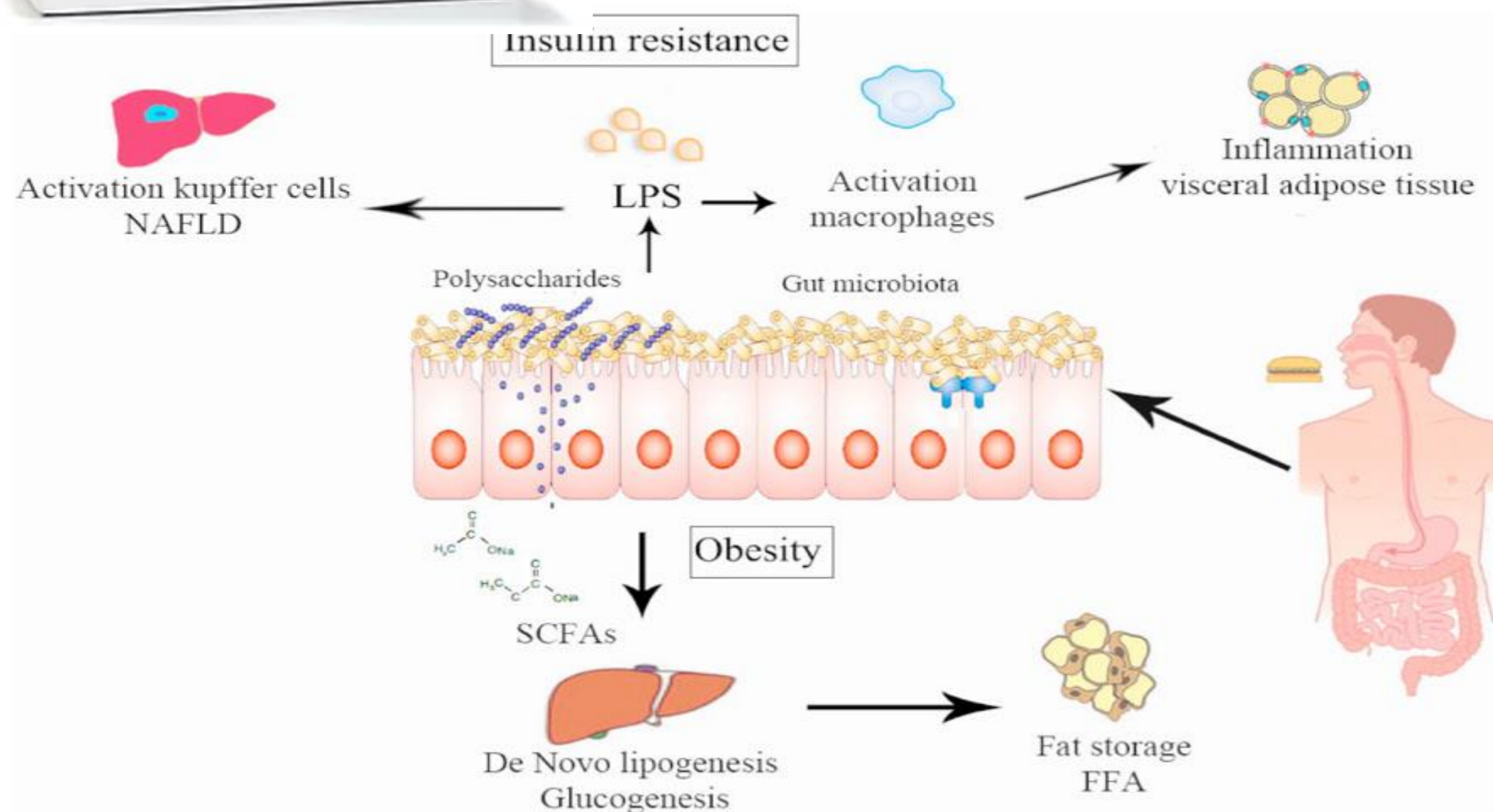
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Background: Obesity is a major public health problem because of its association with non-communicable diseases and all-cause mortality. Lipid accumulation product (LAP), which is calculated as a combination of waist circumference (WC) and fasting plasma triglyceride (TG) levels, has been proposed as an alternative measure of excessive lipid accumulation. Recently, a growing number of studies have shown that LAP is a powerful marker for insulin resistance, metabolic syndrome, diabetes, and hepatic steatosis in the general population and associated with risk of cardiovascular diseases (CVDs). Currently, gut dysbiosis has been identified as a remarkable factor to be considered in the pathogenesis of CVDs. The importance of gut microbiota in health and disease is being highlighted by numerous research groups worldwide. Some research has revealed that glycaemic, lipid, blood pressure and inflammation indicators are significantly improved by supplementing probiotics. The aim of this study was to evaluate the effects of a food supplement based on probiotic microorganisms on lipid accumulation product in overweight/obese subjects.



Nutritional Information		+ Serving (1 stick)
B.Lactis BS05 (DSM 23032)		1 MLD/cellule*
L.Plantarum LP01 (LMG P-21021)		1 MLD/cellule*
L.Buchneri Lb26 (DSM 16341) tinalizzato		20 mg
Selenio		275 mcg (50% VNR)
Zinco		1,5 mg (15% VNR)

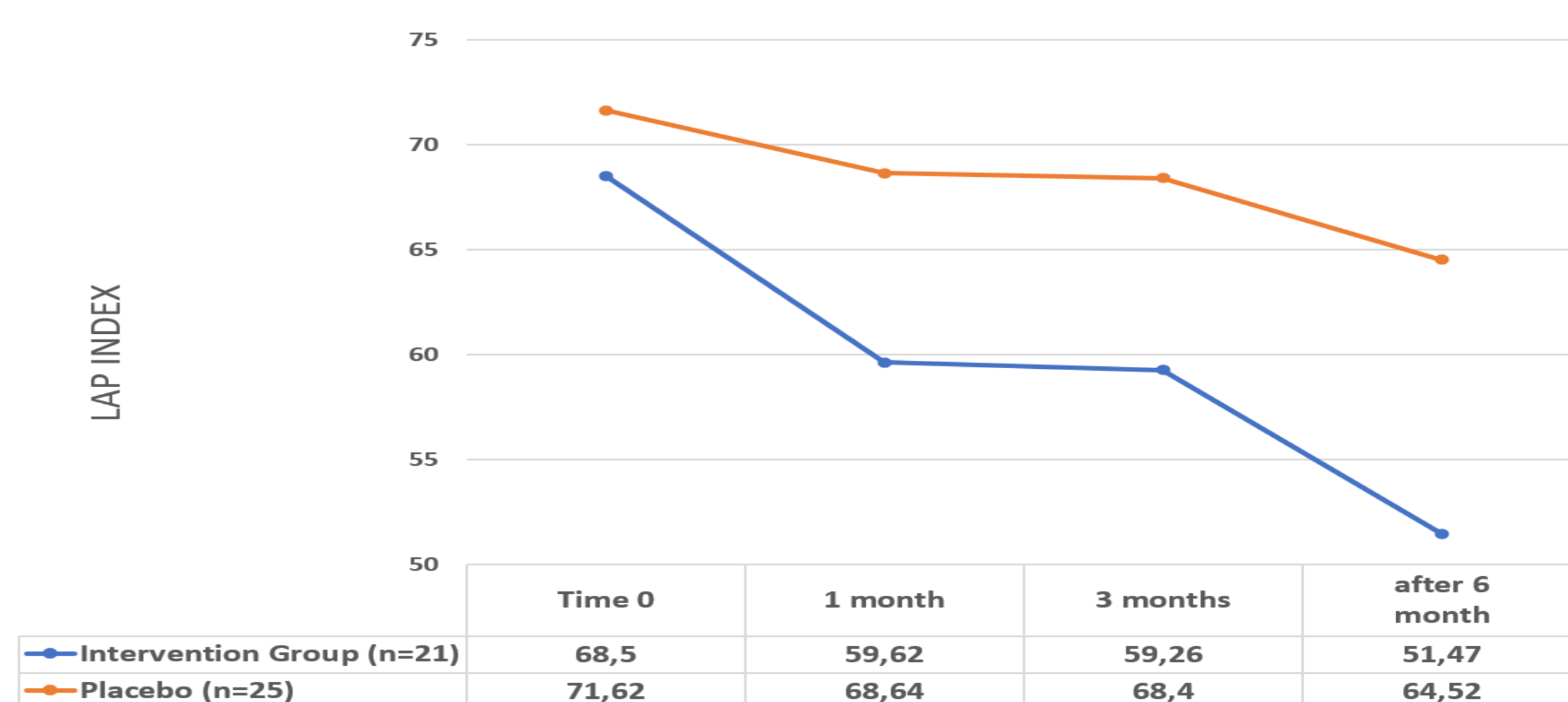
Materials and methods: We examined the data from 46 overweight/obese adults of both genders with high levels of LAP, enrolled in a trial (prot.CE.58/2019) carried out at the Clinical Nutrition Unit of the University of Catanzaro. LAP was calculated using the formula $[WC (cm) - 65] \times TG$ concentration (mmol/L) for men, and $[WC (cm) - 58] \times TG$ concentration (mmol/L) for women. In our analyses, the cut-off value for men was 56.7 and 30.4 for women. The intervention group (n=21) was given a synergistic food supplement based on probiotic microorganisms: Bifidobacterium lactis BS05 (DSM 23032) and Lactobacillus plantarum LP01 (LMG P-21021), capable of promoting the balance of the intestinal bacterial flora. The placebo group (n=25) received food supplement containing maltodextrins. All participants received intensive oral and written recommendations to increase adherence to the Mediterranean diet with energy restriction (-500kcal/day). All subjects underwent fasting blood samples to evaluate lipid, hepatic and glycaemic profiles; they were also subjected to anthropometric measurements and body composition assessment. All measurements were performed at baseline and at 1, 3 and 6 months of follow-up.



Results: A total of 69% were females. The mean age was 55 ± 9 yrs, and BMI was 30.5 ± 4 kg/h². In probiotic group, we found a reduction statistically different in LAP index between 1, 3 and 6 months (LAP= -8.8 ± 17 , $p=0.03$; -9.2 ± 17 , $P=0.02$; -17 ± 20 , $P=0.001$ respectively). In the placebo group we did not found statistically significant change in LAP index during the study. In addition, in the probiotic group we found a statistically significant reduction of serum glucose at 3 and 6 months (glucose: -4 ± 8 mg/dl, $p=0.03$; -5 ± 9 mg/dl, $p=0.01$) and triglycerides after 6 months (-26 ± 48 mg/dl, $p=0.02$). No significant differences in glucose and lipid levels were found in the placebo group. Both groups had a statistically significant reduction of body weight at each follow-up.

Conclusions: The present study suggests that a food supplement based on probiotic microorganisms reduces lipid accumulation product, and improves serum glucose and triglycerides in overweight/obese individuals. If confirmed in randomized clinical trials, the food supplement based on probiotic microorganisms could represent an effective strategy in the prevention of cardiometabolic risk for these patients.

LAP REDUCTION ACCORDING TO THE TREATMENT



LAP VARIATION ACCORDING TO THE TREATMENT

