IMMUNONUTRIENTS INFLUENCE ON BLOOD GLUCOSE OF DIABETIC MICE

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Introduction
Diabetes mellitus is a metabolic disorder primarily involving carbohydrates, followed by lipids and proteins, characterized by hyperglycemia resulting from defects in insulin secretion, in its action or both. Diabetes is one of the most important public health problems worldwide, with increasing incidence, especially in developing countries.

Objectives
The aim of this study was to analyze the immunonutrients performance (glutamine, prebiotic, probiotic and symbiotic omega-3) in the treatment of type 2 diabetes by blood glucose analysis.

Methodology
A total of 42 female mice of the Swiss strain at 12 weeks age were treated with 150mg/kg of alloxan on the first day on 12 hours fasting and 180mg/kg on the second day for the induction of diabetes mellitus. Diabetic mice were supplemented for 15 days with glutamine 500mg/kg, prebiotics FOS 340 mg/kg, probiotics 29 mg/kg, symbiotics 0.18g/kg and omega-3 14.3mg/kg. Healthy and diabetic untreated (DNT) received only water. For biochemical analysis of blood glucose was used serum of mice. Blood glucose was measured before and after the supplementation period.

Results
The results demonstrate that treatment with immunonutrients significantly reduces the blood sugar level when compared to the control group, and the best results were obtained with glutamine 8.5%, prebiotic 28.54%, probiotic 30.81% and symbiotic 6.8%. However, for treatment with omega-3, there was a worsening of diabetic frame, with an average increase of 9.65%, higher than the increase shown by DNT group (4.25%).

Conclusion
We can conclude that alloxan induction of diabetes was successful. We can also imply that glutamine, prebiotic, probiotic and symbiotic had better response in lowering blood glucose whereas the omega-3 worsened diabetes compared to healthy and DNT groups, having a toxic effect on diabetic mice (including a death result). The probiotic was the immunonutrient tested with the best response.

Key words: diabetes, immunonutrition, food supplements.

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