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Insulin resistance in relation to biochemical parameters and food frequency questionnaire in obese patients - Bioactive food project

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Insulin resistance is closely related to body mass, waist circumference and diet. This disorder can lead to lipid metabolism impairment manifested by high free fatty acids level in blood and liver metabolism disturbance. The aim of this study was to find relation between estimated insulin resistance, blood lipid concentrations, liver enzymes levels and food consumption frequency in obese patients.

The study group consisted of 101 patients in average age of 43 years with average body mass index (BMI) of 36,1 km/m2. The body mass, anthropometric indicators, body composition were measured and blood biochemical parameters (fasting glucose, insulin, glycated hemoglobin, lipid profile, liver enzymes, C reactive protein) were determined. Insulin resistance was assessed using homeostatic model assessment calculation (HOMA-IR). The diet composition was estimated using validated Food Frequency Questionnaire (FFQ) and expressed by the daily food items consumption frequency.

Study showed that men had significantly higher HOMA-IR level compared to women ($p<0,05$). Also patients with WHR above cutoff value had significantly higher HOMA-IR ($p=0,003$). The positive correlation between HOMA-IR and ALT, AST, GGTP, TGL and CRP was observed ($p<0,05$). The higher consumption of fruit juices, nectars and cream the higher HOMA-IR level ($p<0,05$). Furthermore 63,6% of study group with higher HOMA IR value was characterized by the lowest seeds and 72,7% by the lowest dry legume seeds consumption.

Limiting the consumption of food products with high sugar and fat content and increased intake of products rich in fiber and antioxidants may be beneficial in insulin sensitivity improvement.

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