EFFECT OF DIET ON INSULIN RESISTANCE IN ADULTS AT RISK OF DEVELOPING TYPE 2 DIABETES MELLITUS

AUTHORS

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KEYWORDS

Insulin resistance; type 2 diabetes mellitus; diet; diet quality.

BACKGROUND

Insulin resistance (IR) has been associated with poor dietary practices and is considered to be the basis of the pathophysiology of type 2 diabetes mellitus (T2DM).

OBJECTIVE

To examine the association between diet and IR in adults at risk of developing T2DM.

METHODS

A cross-sectional study of 112 individuals at high risk of developing T2DM (mean age: 43.4 years; 59 [52.7%] women) was done between May and September 2023. BMI and HOMA-IR were calculated using the participants' weight, height, glucose, and insulin levels, respectively. Using the Health Diet Score to assess diet and the HOMA-IR to calculate IR, the IR cutoff value of 2.5 was determined. To investigate the association between diet quality and IR, the Pearson correlation coefficient and linear regression were used.

RESULTS

HOMA-IR is negatively correlated with diet quality (OR -0.42; 95% CI (-0.56, -0.22); p<0.001), in model 1, adjusted for age (OR -0.44; 95% CI (-0.73, -0.25); p=0.003), in model 2, adjusted for age and BMI (OR -0.32; 95% CI (-0.61, 0.03); p=0.042), and in model 3, adjusted for age, BMI, and gender (OR -0.37; 95% CI (-0.54, 0.12); p=0.068). Diet quality is significantly explained by 0.6% by the HOMA-IR, considering age (R2=0.006, p=0.003), where there is no significance and only adjustment is added for gender (R2 = 0.083, p = 0.076).

CONCLUSION

Individuals at risk of developing T2DM had a negative correlation between diet quality and IR. Considering adult age, gender, and BMI, the HOMA-IR explains 6.1% of the variation in diet quality.

FUNDING AND CONFLICTS OF INTEREST

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