Dietary Program Impact on Biochemical Markers in Diabetics: Systematic Review

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Introduction

Diabetes *mellitus* is a chronic disorder with major expansion worldwide. It's estimated that the number of diabetes sufferers increase rapidly in the coming decades due to the population ageing (Ena, 2016; IDF, 2015). The nutrition intervention emphasizing the promotion of healthy eating has been shown to be an important point in Diabetes Mellitus treatment since it fosters a better glycemic control and lipid profile (ADA 2016).

Objectives / Methods

To verify the effectiveness of the implementation of programs of physical activity on the blood glucose values and lipid profile in patients with diabetes mellitus. The PICO methodology was used, proceeding to a systematic review of the literature published in 2015 in PubMed/Medline database.

Results/ Discussion

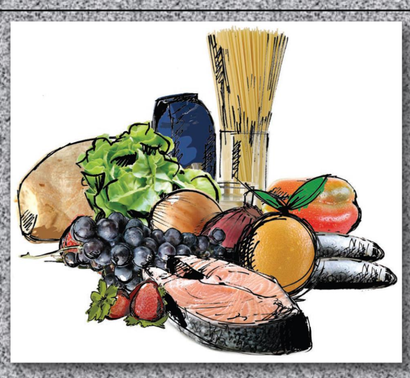

Figure 1 - Healthy eating

It was found that **the adoption of a healthy eating based on consumption** of:

√ **Polyunsaturated fatty acids** (Zheng, Wang, Lin, Yang, & Li, 2015);

√ **Probiotics** (Hove et al., 2015; Ostadrahimi et al., 2015; Tonucci, Olbrich Dos Santos, Licursi de Oliveira, Rocha Ribeiro, & Duarte Martino, 2015);

√ **Caloric restriction** (Nowotny et al., 2015; Nuttall, Almokayyad, & Gannon, 2015);

√ **Low consumption of carbohydrates** (**Nuttall** et al., 2015)...

...is correlated with...

Figure 2 – Accompaniment and surveillance by health professionals

...**Best glycemic levels** and **lipid profile** in patients with diabetes m*ellitus* since there is a:

√ Decrease in **glucose** and **fasting insulin** levels (Hove et al., 2015; Nowotny et al., 2015; Nuttall et al., 2015; Ostadrahimi et al., 2015; Tonucci et al., 2015; Zheng et al., 2015),

√ Decrease in **glycated haemoglobin** levels (HbA1c), (Nowotny et al., 2015; Ostadrahimi et al., 2015);

√ Decrease of **insulin resistance** (Hove et al., 2015; Zheng et al., 2015) and increases its **sensitivity** (Nowotny et al., 2015; Nuttall et al., 2015; Tonucci et al., 2015).

√ Reduction of **weight** and **body mass index (BMI)** (Nowotny et al., 2015; Tonucci et al., 2015; Zheng et al., 2015) (Table 1).

Table 1 – Description of scientific papers included in the study

Author	Results	Level of Evidence
Zheng *et al.*	In type 2 diabetic patients with normal weight the consumption of diacylglycerol oil reduces the glucose, fasting insulin, and insulin resistance. The same is true with weight and BMI in type 2 diabetic patients with normal weight our overweight;	II
Nuttall *et al.*	A diet low in carbohydrates and caloric restriction reduces fasting glucose concentration and body weight and increase the insulin concentration;	II
Nowotny *et al.*	A calorie restricted diet reduces fasting glucose, HbA1C, TC, HDL cholesterol, LDL cholesterol and body weight. Insulin sensitivity increases;	II
Ostadrahimi *et al.*	The consumption of 600 ml/day probiotic fermented milk containing *Lactobacillus casei*, *Lactobacillus acidophilus* and *Bifidobacteria* reduces serum glucose, HbA1c, total cholesterol, HDL cholesterol, LDL cholesterol and TG;	II
Hove *et al.*	The consumption of 300 ml/day of fermented milk with *Lactobacillus helveticus* reduces the plasma glucose concentration in fasting and insulin resistance	II
Tonucci *et al.*	The consumption of 120 g / day of fermented milk containing *Lactobacillus acidophilus La-5* and *Bifidobacterium animalis subsp lactis BB-12* reduces HbA1c, insulin, CT, LDL cholesterol, HDL cholesterol, body weight and increases sensitivity to insulin.	II

Conclusions

Given the high prevalence of diabetes in the population and in the elderlies and as this disease tends to increase with age, it is imperative given its many advantages foster the implementation of dietary programs in accordance with scientifically valid information to make healthy and balanced eating and thus constitute an ally in the prevention and treatment of diabetes *mellitus*.

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