



## High glucose intolerance among TB/HIV patients in Tanzania

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## ABSTRACTS 19th International Congress of Nutrition

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western, and Iranian. Those in top quintile of healthy dietary pattern score were less likely to have diabetes (OR: 0.20; 95% CI: 0.04-0.97), while those with greater adherence to the western dietary pattern were 3.6 times more likely to be diabetics (3.60; 0.96-13.56). After controlling for potential confounders, those in the top quintile of the healthy dietary pattern had lower odds (0.29; 0.11-1.07), albeit non-significantly, for diabetes. Adjustment for confounders also attenuated the association between western dietary pattern and diabetes (3.42; 0.88-13.31). Iranian dietary pattern was not significantly associated with diabetes.

**CONCLUSION:** Major dietary patterns of this Middle Eastern population are not strongly associated with diabetes. Several factors like different definition of diabetes in our study as compared to others, its' lower prevalence, inadequate sample size and the cross-sectional design of the study might provide some reasons.

#### P29-07

##### HIGH GLUCOSE INTOLERANCE AMONG TB/HIV PATIENTS IN TANZANIA

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**RATIONALE & OBJECTIVES:** Diabetes mellitus (DM) may increase the risk of pulmonary tuberculosis (PTB). The aim of this study was to assess the prevalence and correlates of DM among PTB-patients, with/without HIV (co-infection).

**MATERIALS & METHODS:** In a cross-sectional study DM prevalence in PTB-patients was estimated, based on WHO recommendations. HIV-status, neutrophil count, and BMI were determined. PTB-status was based on microscopy. Capillary fasting blood glucose (FBG) was determined, and oral glucose tolerance test (OGTT) was done if FBG>5.0 mmol/L.

**RESULTS & FINDINGS:** In 1168 PTB-patients 36.3% had glucose intolerance (GI), of which DM prevalence was 16.3% using the WHO recommendations. The OGTT decreased the DM prevalence to 4.0%. BMI (OR 1.2, 95%CI 1.06; 1.3), age (OR 1.04, 1.02; 1.06), neutrophil counts (OR 1.2, 1.1; 1.4) and positive PTB (OR 3.1, 1.3; 7.7) were associated with DM.

**CONCLUSION:** GI might contribute to the risk of PTB. 2 months follow-up and matched control group data are available.

#### P29-08

##### THERAPEUTIC EFFECT OF THE MA-PI 2 MACROBIOTIC DIET ON ADULTS WITH TYPE 2 DIABETES MELLITUS

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**RATIONALE:** Little work has been published on macrobiotics and diabetes. A Western scientific evaluation of this procedure was required.

**OBJECTIVE:** To evaluate the metabolic control of patients with diabetes type 2 after 6 months therapy with macrobiotic diet Ma-Pi 2.

**MATERIALS & METHODS:** A clinical trial of 25 adults with type 2 diabetes mellitus treated with anti-hyperglycemic drugs was conducted for six months in order to study the therapeutic effect of the vegetarian macrobiotic diet Ma-Pi 2. Data from dietetic surveys, clinical evolution, nutritional status, glucose and lipid metabolism, use of medication and adverse effects were evaluated. The diet mainly comprised whole grains, vegetables, legumes and green tea. It provided sufficient energy, had a low fat and adequate protein content, and a large quantity of complex carbohydrates, dietary fiber,  $\beta$ -carotene, manganese and magnesium.

**RESULTS & FINDINGS:** At the end of the study, glycemic levels decreased 53%, glycosylated hemoglobin 32%, cholesterol 21%, triglycerides 43% and LDL/HDL cholesterol ratio 61%. Body weight and waist and hip circumferences were significantly reduced. Hemoglobin, creatinine, uric acid, urea, pyruvic glutamic transaminase, heart rate and blood pressure values had stabilized. Vitamin A, E, C, B1, B12 and folate serum levels were satisfactory. Of the total number of patients, 88% totally ceased their anti-hyperglycemic treatment. No adverse effects were observed. The improvement in related conditions, well-being and quality of life was remarkable.

**CONCLUSION:** The Ma-Pi 2 diet proved to be a very suitable therapeutic

alternative in the 25 studied patients with type 2 diabetes mellitus.

#### P29-09

##### PROPORTION OF ABO AND RH BLOOD SYSTEMS IN YOUNG JORDANIANS WITH DIABETES: A SIGN OF POSSIBLE PROTECTIVE EFFECT

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**RATIONALE & OBJECTIVES:** A wide range of blood group systems is identified. The ABO blood groups system, first introduced in 1901, is the most used blood group system. Hitherto, more than 25 major blood group systems, a minimum of 270 red cell phenotypes and more than six hundred red cell membrane antigens are recognized. The objective of this study was to examine whether ABO and Rh (D) blood groups are associated with having type 1 autoimmune diabetes in young Jordanian children.

**MATERIALS & METHODS:** Diabetic children (DC) and their unrelated aged matched non-diabetic children (NDC) were identified. All children were 14 years old or less. The ABO and Rh (D) phenotypes of the participants were determined by slide method at room temperature. The specifications of the manufacturer were maintained. Positive and negative controls were tested in parallel with each batch of tests.

**RESULTS & FINDINGS:** Statistically significant relationships were found for ABO blood group of both DC and NDC ( $P = 0.002$ ). The most frequent blood group in DC and NDC was O+ blood group (54% and 38% respectively) followed by A+ blood group (30% and 22%, respectively) and B+ blood group (16% and 8%, respectively). None of the DC had AB+, A- or O- blood group. All DC were Rh (D) positive, whereas 80% of NDC were Rh (D) positive ( $P \leq 0.001$ ), 8% of NDC of Rh (D) negative had B blood group.

**CONCLUSION:** Blood group O+ was associated with a greater risk of developing diabetes. Whether certain blood group may confer a protective effect from diabetes or not requires further investigation on the secretor status of humans with type 1 autoimmune diabetes and viral infections.

#### P29-10

##### THE CONSUMPTION OF HIGH GLYCEMIC INDEX MEALS INCREASES THE LEVELS OF FRUCTOSAMINE, FREE FATTY ACIDS AND THE EXPRESSION OF TNF-ALPHA IN TYPE 2 DIABETICS

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The results of some epidemiological and interventional studies suggest that the ingestion of low glycemic index (GI) foods may favor a reduction in body weight, body fat and in the levels of inflammatory markers. However, while by its nature an epidemiological study does not prove causation between two variables, most of the published interventional studies present methodological problems, impairing a conclusion about this topic.

The present study evaluated the effect of the consumption of two daily meals, differing in GI, during 30 consecutive days on body composition, biochemical parameters, and level of inflammatory markers in type 2 diabetics. Eighteen volunteers, aged 49.4 + 6.1 years, with a body mass index (BMI) of 29.2 + 4.79kg/m<sup>2</sup> were randomly allocated in the high GI or low GI groups. Test meals were consumed in the laboratory and had similar energy density, macronutrient composition and dietary fiber content. Anthropometric parameters (BMI, waist and wrist circumference), body fat percentage, and biochemical parameters (glucose, insulin, total cholesterol, HDL cholesterol, free fatty acids, triglycerides, fructosamine, interleucine-6 (IL-6), TNF-alpha, high molecular weight adiponectin, fibrinogen, and high-sensitivity PCR (hs-PCR) levels) were evaluated before and after the study intervention.

There was a trend ( $p=0.051$ ) for body fat percentage reduction in the low GI group. An increase in fructosamine ( $p=0.028$ ) and free fatty acids ( $p=0.03$ ) concentrations were observed in the high GI group. The levels of TNF-alpha ( $p=0.047$ ) were significantly higher in the high GI group. These results suggest that while the ingestion of two high GI meals may affect negatively the metabolic profile of type 2 diabetic, the ingestion of low GI meals may favor a reduction in body fat level in these patients