

32.99,  $p < 0.001$ ).

**Conclusions:** PreDM and MixDys and mostly their combination increase the risk of new-onset T2DM in statin-treated individuals.

#### P4.3.316.

##### NON-ALCOHOLIC FATTY LIVER DISEASE AND ITS ASSOCIATION WITH INCIDENT DIABETES IN STATIN-TREATED INDIVIDUALS

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**Aim:** To investigate whether non-alcoholic fatty liver disease (NAFLD) is associated with incident diabetes (T2DM) in statin-treated individuals.

**Methods:** An observational study conducted in Greece including 1,241 dyslipidemic individuals attending a lipid clinic and followed-up for >3 years. As NAFLD was defined the presence of elevated levels of oxaloxate transaminase (ALT) >30 and >19 U/L for men and women, respectively, after excluding other liver diseases (hepatitis B and C, hemochromatosis, autoimmune diseases,  $\alpha$ 1-antitrypsin deficiency and Wilson's disease). As normoglycemic subjects were considered those who with fasting glucose (Glu) <100 mg/dL and as prediabetic those with fasting levels of Glu 100–125 mg/dL.

**Results:** After excluding 166 patients with baseline T2DM and 193 subjects taking lipid-lowering therapy at the baseline visit, 11% of the eligible subjects ( $n=882$ ) developed T2DM during their follow-up (6 years; IQR:4–10). Baseline levels of ALT (OR:1.02; 95% CI:1.01–1.03,  $p<0.05$ ), Glu (OR:1.09; 95% CI:1.07–1.11,  $p<0.001$ ), systolic blood pressure (OR:1.03; 95% CI:1.01–1.04,  $p<0.001$ ) and ratio of triglycerides/high-density lipoprotein cholesterol (OR:1.12; 95% CI:1.05–1.19,  $p=0.001$ ), along with family history of diabetes (OR:2.95; 95% CI:1.54–5.64,  $p<0.001$ ) and intensity of statin treatment (OR:2.44; 95% CI:1.60–3.74,  $p<0.001$ ) were defined as independent factors for incident T2DM. Prediabetic patients with NAFLD (OR:18.06; 95% CI:6.78–48.14,  $p<0.001$ ) or without NAFLD (OR:10.62; 95% CI:4.08–27.59,  $p<0.001$ ), along with the normoglycemic patients with NAFLD (OR:3.29; 95% CI:1.16–9.34,  $p<0.05$ ) were at higher risk of developing T2DM compared with the normoglycemic individuals without NAFLD.

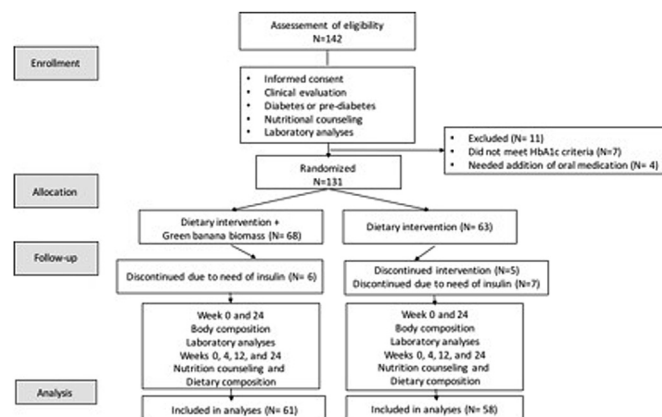
**Conclusions:** NAFLD is associated with increased risk of incident T2DM in statin-treated patients.

#### P4.3.317.

##### BENEFICIAL EFFECTS OF GREEN BANANA BIOMASS CONSUMPTION IN PATIENTS WITH PRE-DIABETES AND DIABETES: A RANDOMIZED CONTROLLED TRIAL

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**Aim:** Diabetes mellitus is a heterogeneous group of metabolic disorders, associated with higher risk of cardiovascular disease. Resistant starch (RS) has physiological functions, delays gastric emptying and can ameliorate glucose metabolism. The aims of this study were to verify whether RS can contribute to weight loss, promote changes in glucose and lipid metabolism, and improve diet quality in patients with pre-diabetes and diabetes.



**Methods:** A total of 113 patients with a mean age of 65 years, were randomized to receive nutritional counseling plus 40g of green banana biomass (~4.5g of RS) (G1,  $n=62$ ), or diet alone (G2,  $n=51$ ) during six months. Body composition, biochemical analyses and dietary intake were evaluated at baseline and end of study.

**Results:** Decreases in diastolic blood pressure ( $P=0.010$ ), body weight ( $P=0.002$ ), and BMI ( $P=0.006$ ) were observed in G1 (see flowchart). Both groups decreased waist and hip circumferences ( $P<0.01$ , for all). Increase in %lean mass ( $P=0.011$ ) with decrease in %fat mass ( $P=0.001$ ) were observed only in G1. There was a reduction in fasting glucose ( $P=0.021$ ) and HbA1c ( $P=0.0001$ ) in G1, whereas in G2, there were decreases in HbA1c ( $P=0.002$ ) and HDL-C ( $P=0.020$ ). Among pre-diabetic subjects, there was a trend to greater reduction on blood glucose ( $P=0.077$ ) in G1, and HbA1c ( $P=0.085$ ) in G2. Both groups increased fiber consumption (G1,  $P<0.0001$ ; G2,  $P=0.020$ ), and decreased lipid (G1,  $P=0.050$ ; G2,  $P=0.005$ ) and polyunsaturated fat intake (G1,  $P<0.0001$ ; G2,  $P=0.014$ ).

**Conclusions:** Green banana biomass favorably modified glucose metabolism, body composition, being a good alimentary strategy, potentially improving metabolic control, especially in pre-diabetes.

#### P4.3.318.

##### RELATIONSHIPS BETWEEN PLASMA LEPTIN LEVELS, LEPTIN RECEPTOR GLN223ARG POLYMORPHISM AND INSULIN RESISTANCE IN KYRGYZ NATIVE SUBJECTS

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**Aim:** The purposes of this study were to examine concentrations of leptin and insulin resistance in Kyrgyz native individuals, and also to explore the links of leptin receptor (LEPR) Gln223Arg polymorphism with leptin levels and insulin resistance among Kyrgyzes.

**Methods:** Our study included 234 Kyrgyz native individuals who were at 35–70 years old. All anthropometric, metabolic factors and biomarkers (fasting glucose, insulin, lipid spectrum) were assessed in Kyrgyzes. Plasma leptin and insulin levels were analyzed by ELISA. Gene polymorphisms were genotyped using TaqMan real-time polymerase chain reaction assay.

**Results:** The results showed that plasma leptin levels correlated with body mass index, plasma fasting glucose, insulin levels, homeostasis model assessment-insulin resistance ( $p<0.05$ ). However, LEPR Gln223Arg polymorphism was not significantly associated with plasma leptin levels ( $p>0.05$ ). Our findings showed that LEPR Gln223Arg polymorphism was associated with higher insulin (8,3 (5,9; 11,9) vs 7,1 (4,4; 10,1),  $p<0.05$ ) and fasting glucose (5,54 (5,2; 6,0) vs 5,39 (5,1; 5,7),  $p<0.05$ ) levels.

**Conclusions:** Our results show association between the Gln223Arg polymorphism and insulin suggesting an influence of this single nucleotide polymorphism on insulin resistance.