ticipants (mean age 55,9±12,3) at baseline screen and it was repeated in 386 subjects in follow-up. HbA1c assay was performed by LPLC chromatography standardized by NGSP. The diagnostic usefulness of HbA1c was evaluated using ROC (Receiver or operating characteristic) curve analysis.
Results: The mean value of HbA1c in 1294 subjects with normal OGTT was 5,4± 0.54% ,in 617 subjects with impaired glucose tolerance- 5,55 ±0.6%, in 214 subjects with newly detected DM - 5,96 ±1.13%, and in 40 - with known DM- 7,1 ±1.64% .The HbA1c didn't change significantly in a group of 253 subjects during 5 year long prospective observation (5,51±0,48 vs 5,49±0,51%). In follow-up study 240 newly detected diabetics were recognised. The baseline cut- off point of HbA1c in ROC curve for future diabetes was estimated at 5,3% (75,2% sensitivity, 50,1% specificity). The HbA1c value ≥6.5% was found in 154 subjects (14,1% of studied cases). Among them 65 subjects were diagnosed by WHO criteria as diabetic and 52 subjects had DM diagnosis by ADA criteria. As the cut-off point of 6.5% is related more to the risk of diabetic complications than single measures of glucose concentrations, the ADA criteria didn't captured 66%, and WHO criteria -58% of high risk individuals. The sensitivity/specificity of A1c cut-off point of 6,5% was in our population 16/97%.
Conclusion: Our results are consistent with data from US population study with comparable sample size and similar age. The diagnostic utility of HbA1c with recommended cut-off point of 6,5% is limited by low sensitivity of test assessed in polish population on 16%.
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Detection of diabetes in coronary artery disease: oral glucose tolerance test or glycated haemoglobin and fasting plasma glucose?
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Background and aims: The proposal of the ADA of incorporating the glycated hemoglobin (A1C) in the diagnosis of the newly detected diabetes (NDD) may interfere with the recommendation of the EASD about performing the oral glucose tolerance test (OGTT) in patients with coronary artery disease without known diabetes. We sought to determine the impact of both test, A1C and OGTT, in the diagnosis of diabetes in our series.
Methods: We analysed 338 patients with coronary artery disease without known diabetes treated with percutaneous intervention. Two weeks after discharge an analysis including fasting plasma glucose (FPG), OGTT and A1C was performed. Newly detected diabetes was diagnosed by FPG if glucose ≥126 mg/dl; by A1C if FPG< 126 mg/dl and A1C≥6.5% and by OGTT if FPG< 126 mg/dl and A1C< 6.5% and glucose post-challenge ≥200 mg/dl.
Results: Age 66.5 (56-74), males 80.1%, hypertension 49.7%, obesity 35.5%, previous myocardial infarction 37.3%. After the analysis the metabolic profile of the series was: NDD 77 patients (22.8%), prediabetes 146 (43.2%) and normoglycemic 115 (34%). Of the totality of patients diagnosed of NDD, in 19 (24.6%) the diagnosis was by FPG, 5 (6.4%) with the A1C and 53 (69%) by OGTT.
Conclusion: In our series a screening of diabetes in patients with coronary artery disease based in the FPG and A1C only diagnoses 31% of the real NDD. The OGTT is still absolutely necessary to rule out the NDD in this population.
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Proposal to rule out the unknown diabetes in patients with coronary disease
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Background and aims: The EASD recommends to perform an oral glucose tolerance test (OGTT) to all the patients with coronary disease without known diabetes. This proposal needs to be balanced with three facts: the OGTT is not usually performed in daily practice, the key in this population is the diagnosis of unknown diabetes (UDM) because the presence of prediabetes would not substantially modify its secondary prevention and lastly the inclusion of the glycated hemoglobin (A1C) in the diagnosis of diabetes. We sought to validate a new score to rule out the presence of UDM in patients with coronary disease, selecting the indication of the OGTT.
Materials and methods: In a cohort of 338 patients without known DM, we perfectly characterized the glycometabolic profile with fasting plasma glucose (FPG), OGTT, A1C and insulinemia, the coronary risk factors and the extension of the coronary disease. With a logistic regression analysis the predictors of UDM by the OGTT (defined as glucose postchallenge>200 mg/dl) were determined and a score was assigned to each patient.
Results: Seventy-seven of the 338 patients presented UDM, 146 prediabetes and 115 were normoglycemics. Thirty-one percent of the UDM could be diagnosed only with the FPG and A1C. The predictors of UDM in OGTT were: Age> 65 years (OR 2.8 (1.2-5.2), p=0.015, 3 points), non-coronary vascular disease (OR 2.6 (1.2-5.9) p=0.018, 3 points), ejection fraction<45% (OR 2.7 (1.03-7) p=0.044, 3 points), FPG> 100 mg/dl (OR 4.74 (2.4-9.5) p<0.001, 5 points) and A1C>6.1% (OR 5.8 (1.5-21.7) p=0.009, 6 points). The best cut-off point was established in >6 points (AUC 0.80, CI 95% (0.74-0.87) p<0.001). Thus, performing the OGTT to 31% of the population and together with the diagnosis by FPG and A1C it is possible to localize 83% of the real cases of UDM.The score was validated in another series of 115 patients with very close reproductability (AUC 0.84, CI 95% (0.74-0.95) p<0.001).
Conclusions: A systematic screening with FPG and A1C and performing the OGTT only depending on the risk assessed by our score (31% of the population) allows the diagnosis of 83% of the UDM.
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Differences in cardiovascular risk profile of diabetic subjects discordantly classified by diagnostic criteria based on glycated haemoglobin and the oral glucose tolerance test
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Background and aims: Last year, an International Expert Committee advocated the use of glycated haemoglobin A1C testing for diagnosis of diabetes. Based on the correlation between A1C levels and risk of retinopathy in several epidemiological studies, the committee determined that an A1C value of 6.5% or greater should be used as the diagnostic threshold. Guided by this report, several leading organizations, including the American Diabetes Association (ADA), have approved the use of A1C as an additional criterion for diagnosing type 2 diabetes. The present study assesses the differences in the cardiovascular risk profiles of subjects differently categorized as having or not having diabetes with diagnostic criteria based on plasma glucose and A1C proposed by the 2010 American Diabetes Association clinical practice recommendations.
Materials and methods: A standard oral glucose tolerance test (OGTT), A1C, and a set of cardiovascular risk factors and indirect measures of insulin resistance and insulin secretion were assessed in 964 individuals without previously known diabetes participating in the Telde Study, a cross-sectional epidemiological survey in Gran Canaria, Canary Islands, Spain.
Results: Taking the OGTT as the golden standard, the sensitivity and specificity of an A1C value ≥ 6.5% were 38.7% and 99.6%, respectively. Only four subjects diagnosed with diabetes by A1C did not also fulfil OGTT-based diagnosis. Those who met both diagnostic criteria presented greater measures of BMI and waist circumference, and higher values for fasting and 2-h plasma glucose, HOMA-IR, plasminogen activator inhibitor-1 and fibrinogen than subjects with diabetic OGTT but A1C < 6.5%. Abdominal obesity and 2 hours plasma glucose were the only variables independently associated with an A1C value ≥ 6.5% in a multivariate regression analysis.
Conclusion: Newly diagnosed diabetic individuals who fulfill both glucose and A1C-based diagnostic criteria for the disease seem to display a more unfavorable cardiovascular risk profile than individuals who meet the glucose-based but not A1C-based criteria.