

RESEARCH ARTICLE

# The simultaneous assessment of glycosylated hemoglobin, fasting plasma glucose and oral glucose tolerance test does not improve the detection of type 2 diabetes mellitus in Colombian adults

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## Abstract

### Introduction

Guidelines recommend early detection of type 2 diabetes mellitus (DM2). The objective of the present study was to evaluate the capacity to identify DM2 in subjects that were screened for DM2 simultaneously with all three of the tests recommended—fasting plasma glucose (FPG), glycosylated hemoglobin (HbA1c) and a 2-hour post 75-g oral glucose tolerance test (OGTT).

### Methods and results

The present analysis of an anonymous database of 1113 adults from a reference clinical laboratory in Bucaramanga, Colombia, was an observational, descriptive, cross-sectional secondary source study. 259 individuals met at least one of the criteria for DM2: FPG  $\geq$  126mg/dL (7.0mmol/L), HbA1c  $\geq$  6.5% (48mmol/mol) and OGTT  $\geq$  200mg/dL (11.1mmol/L). 30 subjects (2.7%) were diabetic according to FPG, 56 subjects (5.0%) by HbA1c and 250 subjects (22.5%) by OGTT. In total 259 subjects (23.3% [IC 95%: 20.7%–25.8%]) were diabetic either by FPG, OGTT or HbA1c.

### Discussion

The largest number of patients were identified as diabetic with the OGTT. The combination of two or three tests did not increase the detection of new cases of DM2. Our findings suggest that routinely requesting FPG, OGTT and HbA1c at the same time may be