

Comparing Fasting Plasma Glucose against Two-hour Post-load Glucose Concentrations for the Diagnosis of Diabetes Mellitus and Glucose Intolerance in Singaporean Hospital Patients

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Abstract

Introduction: Several studies have assessed the impact of the 1997 American Diabetes Association (ADA) recommendation, of using fasting plasma glucose (FPG) concentration, to diagnose diabetes mellitus in population-based cohorts. However, data concerning the impact of this recommendation in the hospital setting are limited. As the performance characteristics of diagnostic tests vary depending on the prevalence of diabetes in the population studied, we have examined the clinical impact of adopting the ADA recommendations in comparison to the traditional 2-hour post-load glucose (2HPG) concentration used by the World Health Organisation (WHO) in diagnosing diabetes and other categories of glucose intolerance in Singaporean hospital patients. **Materials and Methods:** We analysed the results of the standard 75g oral glucose tolerance test (OGTT) performed on 625 patients in our hospital from 1994 to 1999. **Results:** The prevalence of diabetes amongst these 625 patients was 36.8% (230) based on the ADA recommendation of using FPG, 42.8% (263) on using the 2HPG and 52.0% (325) on using the full 1998 WHO criteria. The degree of agreement (κ) in establishing the diagnosis of diabetes between the FPG and 2HPG cut-offs was 0.48. Ninety-five (15.2%) individuals had diabetes based on the 2HPG alone, 62 (9.9%) based on the FPG alone and 168 (26.9%) based on both the FPG and 2HPG. Eighty-six (13.8%) individuals had impaired fasting glucose (IFG) and 123 (19.7%) had impaired glucose tolerance (IGT). The κ -value between IFG and IGT was 0.08. **Conclusion:** Fasting plasma glucose concentration was an inadequate parameter in diagnosing diabetes and intermediate categories of glucose intolerance in our cohort of subjects. Our findings suggest that the OGTT remains an important diagnostic tool for classifying glucose tolerance in our hospital patients.

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