

ABSTRACT

A cross-sectional prevalence study was undertaken to estimate the prevalence of non-insulin dependent diabetes mellitus (NIDDM) and impaired glucose tolerance, in the field practice area of the National Institute of Health Sciences in the Kalutara District of Sri Lanka.

1480 adults aged 25 - 74 years were selected by stratified cluster sampling. A pre-tested, coded questionnaire was used to obtain information on socio-demographic variables, personal and family history, and life-style variables. Height, weight, waist/hip girth and blood pressure were measured. Oral 75g. 2-hour glucose tolerance test was performed on the study subjects. Glucose was measured in capillary whole blood using a reflectance photometer. Data collection was carried out between October 1993 and January 1994, with two survey teams working concurrently at different survey sites. Strict standardisation of methodology was sought through pretraining and in-survey checks. Edited data was analysed using a computer. Basic descriptive statistics were presented. Age-standardised prevalence and associated 95% confidence intervals were calculated by the direct method. Relative risk estimates for risk factors were determined and multiple regression analysis was used in attempts to elaborate important independent risk factors.

Based on the 75g, oral glucose tolerance test and World Health Organization criteria, the age standardised prevalence rate for NIDDM was 8.1 percent (95% Confidence Interval {CI} 6.6 - 9.6) and impaired glucose tolerance 12.9 percent (CI 11.2 - 14.6).

The age standardised prevalence of NIDDM was significantly greater in men (9.4%, CI 6.6 - 12.2) than in women (7.2%, CI 5.7 - 8.7). By contrast the prevalence of IGI was significantly higher in women (14.5 % , CI 12.4 - 16.7) than men (8.5 % , CI 5.9 - 11.0)

The results show that residing in the urban sector carried an increased risk for NIDDM in relation to the rural sector. (Odds ratio = 1.65 : CI 1.44 - 2.39: $p < 0.05$). Moors were at an increased risk of NIDDM compared to Sinhalese (Odds ratio = 1.74 : CI 1.10 - 2.70 : $p , 0.03$).

There is a considerable reservoir of undetected NIDDM subject in the study population - 50% of total cases.

In the multivariate analysis for women, glucose levels were related to age, family history of diabetes, and systolic blood pressure. In the multivariate analysis for men, only age, systolic blood pressure and waist-hip ratio were significantly related to glucose levels.

Based on the 64 randomly selected duplicate samples analysed at the Medical Research Institute, Colombo ($r = 0.95$), the reflectance photometer (Reflolux-S Glucometer) has a high sensitivity (93.3%) an acceptable specificity (95.9%) and predictive values (PPV = 87.5%, NPV = 97.9%), at a level which is adequate for the prevalence of unsuspected diabetes in the community.

This study suggests that non insulin dependent diabetes mellitus may be a prevalent disorder amongst the adults in Sri Lanka.