SUMMARY

BACKGROUND AND OBJECTIVES

Screening for type 2 diabetes (DM) has occupied a centre stage for early detection and treatment to attenuate the long term morbidity and mortality associated with diabetes. The rationale for this study is to evaluate the performance and cost effectiveness of some of the screening methods. This study evaluated five screening methods [urinalysis, random capillary blood sugar (RCBS), American Diabetes Association questionnaire (ADAQ), Cambridge Risk Score (CRS) and glycosylated haemoglobin] for type 2 diabetes. The most cost effective of the methods could be used as a screening tool for diabetes in resource poor nations and for large population screening.

SUBJECTS, MATERIALS AND METHODS

Two hundred and five persons with hypertension were recruited for Type 2 diabetes screening programme, out of which 130 persons had the five screening methods applied on them. Oral glucose tolerance test was used as the “gold standard” and 2 hour blood sample was taken. The sensitivity, specificity, positive predictive value and negative predictive value were calculated. The cost-efficiency and cost-effectiveness of the screening methods were also calculated and compared. The most cost-efficient and cost effective of the screening methods was used to assess the prevalence of type 2 diabetes in another set of five hundred persons with hypertension.

RESULTS

ADAQ has the highest sensitivity result of 100% and the least sensitive was by RCBS (16.66%)
RCBS and urinalysis have the highest specificity result of 100% and the lowest specificity of 24.24% was by CRS.
RCBS and urinalysis have the highest PPV of 100% and the lowest is by CRS, with a PPV result of 16.66%.
ADAQ has the highest NPV of 100% and the lowest is by glycosylated haemoglobin of 78.26%.
The test with the cheapest material cost per test was ADAQ which cost N1,165.54 and the most expensive was HbA1c going for N22,092.00 per person.
The American Diabetes Association Questionnaire had the lowest cost-efficiency analysis of N6.73, and glycosylated haemoglobin had the highest N174.16.
The American Diabetes Association has the lowest cost-effectiveness of N11.63, and glycosylated haemoglobin has the highest of N492.23.
The prevalence of type 2 diabetes in persons with hypertension was 38.2% (191/500) using American diabetes Association Questionnaire.

**CONCLUSIONS AND RECOMMENDATIONS**

American Diabetes Association Questionnaire had the best sensitivity, negative predictive value and the most cost-efficient and cost-effective result. Random capillary blood sugar and urinalysis had the best specificity and positive predictive values. There is need for American Diabetes Association Questionnaire to be validated in our cohort and could be used in community screening program for type 2 diabetes.