Background

There is a paucity of existing studies on the use of HbA1c as a screening tool for type 2 diabetes among blacks. Objective: To evaluate the performance of HbA1c as a screening tool for type 2 diabetes among black people with systemic hypertension.

Methodology: Two hundred and seven subjects attending the out-patient department of Lagos University Teaching Hospital were recruited, out ofwhich131 of the subjects, had OGTT done, 2-hour post glucose load plasma glucose assay was used as a gold standard for the diagnosis. Using a systemic sampling of one out of every four, thirty-three of the subjects had HbA1c assayed. Two of the assay revealed error reports and were thus excluded from the analysis. The data was analysed using SPS 11. Glycated haemoglobin of <6.1% was considered to be negative while glycated haemoglobin of ≥6.1was considered being positive for the screening. Two-hour plasma glucose of <11.1mmol/l(200mg/dl) was considered to be negative while ≥11.1mmol/l(200mg/dl) was considered to be positive for the diagnostic test. A 2x2 table was made to calculate specificity, sensitivity, positive predictive value, negative predictive value, the efficiency of the test and prevalence of the disease using HbA1c. Pearson correlation, bivariate and Receiver Operative Characteristic Curve was also plotted.

Results-The mean age of the subjects that had HbA1c assay was 54.26±6.6years. The subjects were made up of 25(80.6%) females and 6(18.4%) males. Mean HbA1C was 6.6% and mean 2hour plasma glucose was 169.47mg/dl. The sensitivity was 57.14%, specificity of 62.5%, the positive predictive value of 30.77%, the negative predictive value of 83.33%, efficiency 61.29, the prevalence of 41.94. The correlation of HbA1c to 2hrs post glucose load was 0.73, y= -158+ 52x, P = 0.00. The area under ROC was 0.682 which was significant.

Conclusion-The performance of this screening test is low compared with the results of other studies among Caucasians.

Key words-Screening-type 2 diabetes-HbA1c, 2-hour plasma glucose.