GW23-e1152

EZSCAN SCREENING OF IMPAIRED GLUCOSE TOLERANCE AND DIABETES IN A CHINESE POPULATION

doi:10.1136/heartjnl-2012-302920f.6

[1]Lizhu Chen, [2]Dayi Hu. *[1]Chongqing Medical University, Chongqing, China; [2]Peking University People's Hospital*

Objectives EZSCAN (Impeto Medical, Paris, France), a non-invasive technology that evaluates sweat gland dysfunction through electrochemical skin conductance (ESC) measurement, is a promising new approach for detecting and quantitating impaired glucose tolerance (IGT) and diabetes risk. This cross-sectional study was designed to determine the efficacy and cutoff points of EZSCAN for diagnosing IGT and diabetes in a Chinese population, as compared to traditional blood and plasma glucose tests.

Methods Two-hundred and seventy individuals were recruited for the study during routine check-up appointments at Xianghe Community Hospital. All subjects underwent oral glucose tolerance test (OGTT), haemoglobin A1c (HbA1c) test, fasting plasma glucose (FPG) test, and EZSCAN. Test results were used to classify subjects as normal glucose tolerance, IGT, or newly diagnosed diabetes, according to 1999 WHO criteria. Spearman correlations were used to investigate the agreement between EZSCAN and blood/plasma glucose tests. A receiver operating characteristic (ROC) curve was used to evaluate the diagnostic properties of EZSCAN for IGT and diabetes.

Results Forty (14.8%) subjects were newly diagnosed with diabetes, while 79 (29.3%) had IGT and 151 (55.9%) had normal glucose tolerance. The value of EZSCAN measurement were 34 ±13%, 47±11% and 48±11% in normal glucose tolerance subjects, IGT and newly diagnosed diabetes subjects respectively. For the total population, the correlation coefficient between EZSCAN and OGTT was 0.462 ($p<0.001$), between EZSCAN and FPG was 0.182 ($p<0.001$), and between EZSCAN and HbA1c was 0.379 ($p<0.001$). The cutoff point for EZSCAN detection of IGT was 37% (sensitivity=87%, specificity=62%, area under curve (AUC) =0.769), and the cutoff point for newly diagnosed diabetes was 50% (sensitivity=53%, specificity=59%, AUC=0.528).

Conclusions The non-invasive EZSCAN test is an effective screening tool of glucose dysfunction for ethnic Chinese. For this population, the EZSCAN cutoff points for optimal detection of IGT and diabetes are 37% and 50%, respectively.