Abstract; Sri Lanka Medical Association - 121st Annual Scientific Sessions; 2008_.45pp Abstract

Development and validation of a risk score for targeted screening of prevalent diabetes among adults in Sri Lanka

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Background: Population screening for diabetes is not undertaken due to the high costs involved. Simple tools to identify high risk individuals for confirmatory testing can be cost saving. Objectives: To develop and validate a risk score for detection of prevalent diabetes among adults in Sri Lanka. Design, setting and methods: Data were available from a nationally representative sample of 4246 adults after excluding those with previously diagnosed diabetes. Two thirds of this sample was randomly selected for the development and remaining one third for the validation of the score. Factors that were significantly associated with prevalent diabetes in a univariate analysis [age, body mass index, waist circumference hypertension, family history, physical inactivity, gestational diabetes, osmotic symptoms and balanitis in males or vulvitis in females] were used to derive individual risk scores. Risk scores were generated for individual factors by multiplying the beta coefficient values obtained in multiple logistic regression by a uniform factor. A cut off value of the sum of individual scores was determined using ROC curve analysis as 32. Results: The area under the curve for prevalent diabetes was 0.78 (CI 0.73-0.82). In the sample 36.3% had a total score of >32. A risk score of >32 gave a sensitivity, specificity, positive predictive value and negative predictive value of 75%, 65.5%, 9.7% and 98.2% respectively. Conclusion: Using this simple and non-invasive risk evaluation tool it was possible to narrow down the percentage that needed diagnostic testing for diabetes to 36.3% of this population while detecting 75% of the undiagnosed subjects.