

## Diabetes plus

**061 PREDICTION SCORES TO IDENTIFY OLDER ADULTS AT HIGH RISK FOR TYPE 2 DIABETES**

<sup>1</sup>SG Wannamethee, <sup>1</sup>O Papacosta, <sup>2</sup>P Whincup, <sup>3</sup>C Carson, <sup>1</sup>MC Thomas, <sup>4</sup>DA Lawlor, <sup>3</sup>S Ebrahim, <sup>5</sup>N Sattar. <sup>1</sup>Research Department of Primary Care and Population Health, University College London, London, UK; <sup>2</sup>Department of Community Health Sciences, St George's, University of London, London, UK; <sup>3</sup>Non-Communicable Disease Epidemiology Unit, Department of Epidemiology and Population Health, LSHTM, London, UK; <sup>4</sup>MRC Centre for Causal Analyses in Translational Research, Department of Social Medicine, University of Bristol, Bristol, UK; <sup>5</sup>Division of Cardiovascular and Medical Sciences, University of Glasgow, Glasgow, UK

doi:10.1136/jech.2009.096727i

**Background and Aim:** The greatest relative increase in type 2 diabetes (T2DM) prevalence in developed countries thought likely to occur over the next 25 years will be in the over 65 age group. The aim of this study was to examine the effectiveness of both simple strategies based on simple clinical parameters (suitable for use in primary care) and more complex scores involving blood markers to identify older individuals at high risk of developing T2DM.

**Methods:** A prospective study of non-diabetic men (n = 3490) and women (n = 3392) aged 60–79 years followed up for a mean period of 7 years, during which there were 298 incident cases of T2DM. Logistic regression was used to develop prediction scores to predict incident cases starting with non laboratory predictors and adding blood markers that predicted the incidence of T2DM. Receiving operating characteristics (ROC) analyses were used to assess improvement in prediction.

**Results:** The area under the curve (AUC) for a non laboratory score which included age, sex, family history of diabetes, smoking status, BMI, waist circumference, hypertension, and recall of doctor diagnosis of CHD was 0.765; sensitivity and specificity in the top quintile of the score was 50.3% and 81.4% respectively. Addition of simple blood markers HDL-C, triglyceride and glucose improved prediction significantly (AUC = 0.817 p < 0.0001; sensitivity 63.8%; specificity 82.0%). Addition of gamma-glutamyl-transferase increased sensitivity and specificity further to 65.8% and 82.1% respectively. Further addition of CRP made no improvement. Of those who were classified as low risk (defined as those who fell into the bottom 60% based on the non-laboratory score), the majority (88%) remained there even when routine blood markers were used and only 3% would be reclassified as high risk (defined as the cut off for the top quintile of the non-laboratory score) on the basis of blood markers. However, appreciable proportions of those in the top 40% of the non laboratory score were reclassified on the basis of blood markers into higher or lower risk categories (59%).

**Conclusion:** In large population settings and for cost effectiveness, simple non-laboratory measurements could be used in the first instance to identify a subgroup of older adults who could benefit from further testing with routine blood markers to identify those at highest risk for intervention.

**062 RELATIVE RISK OF MORTALITY ASSOCIATED WITH DIABETES IN SCOTLAND IN 2007: A NATIONWIDE RECORD LINKAGE STUDY**

S Wild, for the Scottish Diabetes Research Network Universities of Aberdeen, Dundee, Edinburgh and Glasgow, UK

doi:10.1136/jech.2009.096727j

**Background:** People with diabetes are known to be at increased risk of mortality compared to the general population but recent data on this association are limited. Diabetes register data are

collected in Scotland in primary and secondary care for the whole population of people with diabetes and can be linked to national mortality records.

**Methods:** We estimated standardised mortality ratios (SMRs) for deaths from all-causes and heart disease (ICD-10 codes I00-52) identified by linkage to mortality records by type of diabetes and sex among people on the Scottish population based diabetes register in 2007 using numbers of deaths among the whole population of Scotland and 2007 mid-year population estimates for the standard.

**Results:** Among 209 095 people with type 1 and type 2 diabetes in Scotland in 2007 (diabetes prevalence 4.1%) there were 7803 all-cause and 2073 heart disease deaths. SMRs (95% CIs) for all-causes were 2.51 (2.24 to 2.80) and 2.79 (2.46 to 3.16) for men and women with type 1 diabetes (T1DM) and 1.27 (1.23 to 1.31) and 1.39 (1.34 to 1.43) for men and women with type 2 diabetes (T2DM) respectively. For heart disease SMRs (95% CIs) were 2.95 (2.38 to 3.65) and 4.33 (3.41 to 5.49) for men and women with T1DM and 1.52 (1.43 to 1.61) and 1.59 (1.49 to 1.71) for men and women with T2DM respectively. Further adjustment for socio-economic status made little difference to SMRs.

**Conclusions:** We observed similar patterns of mortality by age, sex, type of diabetes and cause of death to previous studies but lower relative mortality associated with diabetes. This latter finding may reflect differing populations and study design but might also indicate increased use of primary and secondary preventative therapies in people with diabetes. Nationwide diabetes epidemiology using routine data is now possible in Scotland.

**063 QUANTIFYING THE ASSOCIATION BETWEEN TUBERCULOSIS AND DIABETES: A CASE-CONTROL ANALYSIS**

<sup>1</sup>V Corris, <sup>2</sup>N Unwin, <sup>2</sup>J Critchley. <sup>1</sup>Newcastle Primary Care Trust, Newcastle upon Tyne, UK; <sup>2</sup>Institute of Health and Society, Newcastle University, Newcastle upon Tyne, UK

doi:10.1136/jech.2009.096727k

**Background:** Tuberculosis (TB) remains a major global health problem. A possible risk factor for TB is diabetes (DM), which is predicted to increase dramatically over the next two decades, particularly in low- and middle-income countries, where TB is widespread. This convergence of two epidemics has highlighted the need for a better understanding of the possible association between the two diseases, and its potential significance for public health. This study aimed to assess the strength of the association between TB and DM, using US data.

**Methods:** A case-control analysis was performed using data from the second National Health and Nutrition Examination Survey (1976–1980). Cases were respondents who had ever been diagnosed with TB (n = 166), and controls were respondents who reported never having been diagnosed with TB (n = 15 191). Exposure to diabetes and intermediate hyperglycaemia was defined using both a self-reported measure, and measures combining self-reported disease with undiagnosed disease identified via an Oral Glucose Tolerance Test (OGTT). Logistic regression analysis, taking into account survey design, was undertaken to estimate an adjusted odds ratio (OR) for the association of TB with diabetes and with intermediate hyperglycaemia, controlling for potential confounding variables – age, gender, race/ethnicity, socio-economic status, household contact with TB, smoking status and BMI.

**Results:** Depending on the exposure measure used, the crude odds of TB varied between 2.90 (95% CI 1.77 to 4.76) and 3.35 (95% CI 1.96 to 5.74) for people with diabetes compared to those without. Adjustment for potential confounders slightly attenuated the strength of the association; adjusted ORs varied between 2.40 (95% CI 1.43 to 4.01) and 2.60 (95% CI 1.56 to 4.33). No association