

**P2-66 PHYSICAL ACTIVITY AND ITS ASSOCIATIONS WITH PREVALENCE OF OVERWEIGHT, HYPERTENSION, DIABETES AND ISCHAEMIC HEART DISEASE IN THE KADOORIE BIOBANK STUDY OF 0.5 MILLION PEOPLE IN CHINA**

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**Introduction** Physical activity is associated with cardiovascular risk in Western populations but evidence from the Chinese population is limited.

**Methods** We examined baseline data on over 500 000 people aged 30–79 years who, during 2004–2008, were recruited into a prospective study from 10 regions in China. Information on physical activity was collected using an interviewer-administered questionnaire that enquired about the frequency, duration and intensity of work-related and leisure activities. Total physical activity (MET-hours/day) was calculated from the time reportedly spent on each activity and the published estimate of energy expenditure per unit time (MET) for that specific activity. Body mass index, blood pressure and capillary glucose were measured. Outcomes of interest included overweight, hypertension, diabetes status (which were all defined using established criteria) and self-reported history of ischaemic heart disease (IHD). Logistic regression analyses were performed to assess the association of physical activity with each outcome.

**Results** Of the 456 118 participants who were free of major chronic diseases other than IHD, the mean age was 51 years and 60% were women. Physical activity was significantly inversely associated with overweight, hypertension, diabetes and IHD, after adjustment for age, sex, region, education, income and smoking status. Comparing the bottom 20% vs the top 20% of physical activity, the adjusted ORs were: 1.25 (95% CI 1.23 to 1.28) for overweight, 1.23 (1.19 to 1.26) for hypertension, 1.72 (1.63 to 1.82) for diabetes and 1.59 (1.46 to 1.73) for IHD (each  $p < 0.0001$ ).

**Conclusion** In Chinese adults, low physical activity is associated with an increased prevalence of overweight, hypertension, diabetes and IHD.

**P2-67 REVERSING THE EPIDEMIC OF CIRRHOSIS MORTALITY: EVIDENCE FROM BIRTH COHORT ANALYSIS**

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**Introduction** Alcohol is one of the top 10 risk factors for death in middle and high income countries. As average incomes in developing nations rise, disposable income will become available for alcohol. This could result in epidemics of alcohol related illness. Average national alcohol consumption has been shown to correlate with national rates of liver cirrhosis mortality in developed nations. Many countries have reversed trends of increasing cirrhosis mortality over short time periods. An improved understanding of the mechanism of these reversals would be of great benefit to policy makers.

**Methods** Mortality data for developed nations over the past 50 years were investigated by the birth cohort approach. Data were obtained from WHO. Age specific mortality rates were plotted against age at death for each birth cohort. This permitted a comparison between age specific rates throughout the life of each birth cohorts.

**Results** In countries where an increasing trend in alcohol consumption was sharply reversed, liver cirrhosis death rates fell dramatically. Further it did so simultaneously in all adult age groups. Subsequently each birth cohort continued to experience almost

uninterrupted falls in age specific death rates. Moreover those birth cohorts which were experiencing high rates of mortality fell faster than those experiencing low rates. This may indicate that birth cohorts with high rates had a higher attributable fraction due to alcohol consumption.

**Conclusion** This study has shown that dramatic and sustained falls in cirrhosis mortality are possible. The challenge for governments is to implement policies to achieve this.

**P2-68 TRENDS IN CHRONIC DISEASE MORTALITY IN BRAZIL, 1996–2007**

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**Background** In recognition of the large burden and economic impact of non-communicable chronic diseases (NCDs), especially in low and middle income countries, the WHO has proposed a goal of an additional 2% reduction in mortality rates per year over current trends, and the United Nations is holding a High level Meeting on NCDs in September, 2011.

**Objective** To describe recent NCD mortality trends in Brazil, a middle-income country, taking into account recent improvements in death reporting.

**Methods** We obtained ICD-10 coded mortality data from the Brazilian mortality information system and population denominators from the Brazilian Institute of Geography and Statistics (IBGE). IBGE enumerated the population in 1996 and 2000, and extrapolated estimates for 2007. We redistributed ill-defined causes of death equally across all non-external cause deaths. We corrected for underreporting of deaths based on the ratio of expected to observed deaths. Expected deaths were estimated by IBGE, on the basis of life table analyses. Mortality rates were age-adjusted to the world population standard.

**Results** NCDs now account for 72% of deaths. In unadjusted analyses, corrected NCD mortality rates increased 5% over the 12-year period. Age-adjusted rates declined 1.8%/yr. Declines were greatest for chronic respiratory diseases (2.8%/yr) and cardiovascular diseases (3.5%/yr). Though declines occurred in all regions, 2007 rates are greatest in Brazil's poorest regions, where diabetes deaths have increased markedly.

**Conclusion** The decline in NCD mortality observed in Brazil demonstrates that a 2% decline/year is feasible, and encourages further public health action.

**P2-69 METABOLIC SYNDROME AND RISK OF BRAIN TUMOUR IN A LARGE POPULATION-BASED COHORT STUDY**

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**Background** There are few established determinants of brain tumour. We assessed among adults the risk of brain tumour in relation to metabolic syndrome factors.

**Methods** 580 000 subjects from Sweden, Austria, and Norway were followed for a median of 10 years (Me-Can). Brain tumour information was obtained from national cancer registries. The factors of metabolic syndrome, body mass index, blood pressure, and blood levels of glucose, cholesterol, and triglycerides, were analysed in

quintiles and for transformed z-scores (mean of 0 and SD of 1). Cox proportional hazards regression models were applied, stratified by cohort and corrected for measurement error.

**Results** In total 1312 primary brain tumours were diagnosed during follow-up, predominantly high-grade glioma (n=436) and meningioma (n=348). For meningioma, the HR was increased for systolic blood pressure (HR=1.27 per unit SD, 95% CI 1.03 to 1.57), for diastolic blood pressure (HR=1.29, 95% CI 1.04 to 1.58), and for the combined metabolic syndrome score (HR=1.31, 95% CI 1.11 to 1.54). For high-grade glioma the risk was increased for diastolic blood pressure (HR=1.23, 95% CI 1.01 to 1.50) and triglycerides (HR=1.35, 95% CI 1.05 to 1.72). For both meningioma and high-grade glioma, the risk was more than doubled in the fifth quintiles of diastolic blood pressure compared to the first quintile. For systolic blood pressure the meningioma risk was even larger.

**Conclusion** Increased blood pressure was related to risk of brain tumour, particularly of meningiomas.

## P2-70 PREVALENCE AND ASSOCIATED RISK FACTORS OF PERSISTENT ALBUMINURIA AMONG HYPERTENSIVE URBAN POPULATION OF KARACHI PAKISTAN

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**Background** Kidney failure is a worldwide public health problem, with increasing incidence and prevalence, high costs and poor outcome. Detection and treatment of chronic kidney disease, prior to kidney failure, is therefore of paramount importance. Albuminuria is one of the earlier markers of kidney damage and screening for albuminuria is recommended in high risk patients.

**Objective** To determine the prevalence and associated risk factors of persistent albuminuria, defined as urine albumin concentration of 20 mg/l and urine sex-specific albumin-to-creatinine ratio of 20 and 30 mg/g for males and females respectively persisting for more than 3 months in hypertensive population.

**Methods** 72% of 1340 newly diagnosed hypertensive subjects from ongoing community based cohort study who had been screened once for the presence of albuminuria (n=240), were retested for the presence of persistent albuminuria in this study. Albumin concentration (mg/l) and albumin-to-creatinine ratio (mg/gm) were determined in a spot morning urine sample by Nephelometry.

**Results** Prevalence of persistent abnormal albuminuria 9.3% [7.8%–10.8%]. Mean age 52 (±11.4) years and 58% were males. Factors independently associated were male gender (OR 2.0 (1.24–2.97)), young age with positive family history of KD disease (OR 15.51 (7.35–32.97)). Off the measurable variables high cholesterol levels (p<0.001), and progressively higher levels of systolic BP (p<0.001) were associated risk factors.

**Conclusion** Hypertensive kidney damage is already present in a significant number among newly diagnosed hypertensive population suggesting late detection of high blood pressure. Public awareness through education is necessary in developing countries to detect hypertension before target organ damage has occurred.

## P2-71 SOCIOECONOMIC INEQUALITIES IN OVERWEIGHT AMONG ADULTS IN TURKEY: A REGIONAL EVALUATION

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**Introduction** Patterns of socioeconomic inequalities in obesity and overweight have not been documented for Turkey. This study aimed

to describe educational and wealth-related inequalities for overweight in Turkey, taking a regional perspective.

**Methods** Data from the World Health Survey 2002 for Turkey was used. Among the respondents 20 years and older, 3790 women and 4057 men had data on self-reported height and weight. Respondents were classified according to education years and a wealth score derived from the availability of household assets. Logistic regression analysis was applied to assess the relationship between overweight and socioeconomic factors. Analyses were stratified by sex and region (West, Mediterranean, Middle, Black Sea, East).

**Results** Age-adjusted overweight prevalence is 48.4% for women and 46.1% for men. For men, education was not systematically related to overweight while overweight was significantly increased among the highest wealth groups. For women, the prevalence of overweight was highest for low-educated and middle-wealth groups. The size of the inequalities in overweight showed only small regional variations. In the East, however, overweight prevalence was more related to higher socioeconomic position than in the other regions.

**Conclusion** Socioeconomic inequalities for overweight in Turkey are at a similar level as in most European countries, and especially comparable to southern Europe. The smaller inequalities in the East correspond to the low level of socioeconomic development at this part of the country.

## P2-72 IMPACT OF THE INTRODUCTION OF SELECTIVE COX-2 INHIBITORS ON HOSPITALISATION FOR GASTRIC BLEEDING IN AUSTRALIA

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**Background** Selective COX-2 inhibitors (coxibs) have been shown to be advantageous for gastrointestinal safety in several large studies but whether this translates into fewer events at the population level is unclear.

**Aim** To examine the relationship between prescriptions for non-selective NSAIDs, selective COX-2 inhibitors (coxibs), H2-receptor antagonists (H2RA) and protein pump inhibitors (PPI), and hospital separations for upper gastro-intestinal haemorrhage (UGH) in Australia, over the period 1998–2002.

**Methods** Interrupted time series study. Monthly hospital separations for UGH for Australia for the period July 1998 to June 2002 were obtained from the Australian Institute for Health and Welfare. Data on prescriptions for coxibs and non-selective NSAIDs, PPIs and H2RAs were obtained from commercial sources for Australia for the same period. Rates of UGH per 1000 prescriptions for all NSAIDs were modelled by Poisson regression. The period before the introduction of coxibs (1998–1999) was compared with the period after their introduction (2001–2002).

**Results** Rates for UGH per 1000 prescriptions for all NSAIDs significantly declined between the two periods. Adjusting for prescriptions for PPIs and H2RAs improved the fit of the model and after adjustment, the reduction in UGH separation rates per 1000 prescriptions for all NSAIDs was estimated to be 9.5% (95% CI 9.1% to 10.9%).

In this presentation, we will also provide extended results covering the period January 1997 to October 2010, and also including sales of anti-ulcerants and other non-steroidal anti-rheumatics in the model.