

# Ageing and cardiovascular disease

## OP21 PREDICTION OF FUTURE ISCHEMIC STROKE TRENDS IN SWEDEN TO 2030: A MODELLING STUDY

<sup>1</sup>KW Giang\*, <sup>2,3</sup>P Bandosz, <sup>2</sup>M Guzman-Castillo, <sup>1</sup>M Adiels, <sup>1</sup>L Björck, <sup>2</sup>S Capewell, <sup>2</sup>M O'Flaherty, <sup>1</sup>A Rosengren. <sup>1</sup>Molecular and Clinical medicine, University of Gothenburg, Gothenburg, Sweden; <sup>2</sup>Public Health and Policy, University of Liverpool, Liverpool, UK; <sup>3</sup>Preventive Medicine and Education, Medical University of Gdańsk, Gdańsk, Poland

10.1136/jech-2018-SSMabstracts.21

**Background** The burden of cardiovascular disease and death has plummeted over recent decades in Sweden and comparable countries. But might it soon increase as a result of population aging? Few studies have formally investigated future stroke trends. The aim of this study was therefore to quantify the future burden of ischemic stroke in Sweden until 2030.

**Methods** We developed and validated a discrete open cohort Markov model for ischemic stroke (IS) in the Swedish population. We used population data from Statistics Sweden, the Swedish inpatient registry and cause-specific death registries to calculate IS prevalence and absolute numbers from 2000 to 2010. We then estimated future trends in IS incidence and mortality rates until 2030 using a BAPC (Bayesian aged-period cohort) approach. We also conducted sensitivity analyses to better quantify uncertainty around model inputs and outputs.

**Results** Overall IS prevalence was predicted to decrease by approximately 20% between 2010 and 2030, from 170 to 137 per 10 000 population and from 183 to 157 per 10 000 in men and from 157 to 116 per 10 000 in women.

During the same period, the overall number of IS patients might fall by just 3%, from 1 27 000 in 2010 to 1 23 000 in 2030 (decreasing from 59 000 to 52 000 in women, and increasing modestly in men, from 68 000 to 71,000).

Worryingly, the prevalence of IS in young people aged <45 years was predicted to increase from 5.4 to 6.7 per 10 000 population (the number of IS patients correspondingly increasing from 1970 to 2,610).

IS prevalence in elderly people aged >85 years was predicted to fall by a third, from 1180 to 800 per 10 000 population. However, the actual number of IS patients might increase from 29 470 to 31,800, reflecting a growing elderly population.

**Conclusion** Ischaemic stroke prevalence in Sweden might well fall by 20% between 2010 and 2030. However, the overall number of IS patients could remain above 1 20 000 per year. More worrying still, IS cases among the older citizens will increase due to population ageing, as will morbidity among the youngest groups. To reduce the future burden of stroke, Sweden needs a more ambitious and comprehensive prevention strategy.

## OP22 ALLOSTATIC LOAD IS ASSOCIATED WITH CORONARY HEART DISEASE, BUT NOT WITH DEMENTIA: EVIDENCE FROM A 12-YEAR FOLLOW-UP IN THE ENGLISH LONGITUDINAL STUDY OF AGEING

D Cadar\*, J Abell, RA Hackett, A Steptoe. *Behavioural Science and Health, University College London, London, UK*

10.1136/jech-2018-SSMabstracts.22

**Background** Allostatic load (AL) has been proposed as a conceptualisation of cumulative biological burden on the body

that emerges through attempts to adapt to life's demands. Using a multisystem summary measure of AL, we evaluated its associations with subsequent coronary heart disease (CHD) and dementia.

**Methods** The data used for these analyses are from 4335 men and women aged ≥50 years at recruitment from the English Longitudinal Study of Ageing (ELSA), an ongoing, representative prospective cohort study. Seven waves of data between 2004/2005 (wave 2) and 2016/2017 (wave 8) were analysed. CHD events were defined as the fatal and non-fatal myocardial infarction (MI) and Angina occurring after the study entry. Dementia was determined by doctor-diagnosis combined with a score above the threshold of 3.38 on the Informant Questionnaire on Cognitive Decline in the Elderly. The AL index included 4 biomarker risk groups covering cardiovascular (systolic and diastolic blood pressure, pulse rate), metabolic (total cholesterol-to-HDL ratio, HbA1c, triglycerides), immune (CRP, fibrinogen) and anthropometric systems (waist to height ratio, underweight), measured at wave 2. Each biomarker was grouped into high (1) vs low (0) risk. Except for underweight, the highest gender-specific quartile of the distribution for each biomarker was scored with 1. Multivariable logistic regressions were used to estimate the associations between the AL index and subsequent CVD or dementia prevalence, while controlling for confounders (age, sex, marital status, education, wealth) and potential mediators (alcohol, smoking, fruit and vegetable consumption, and physical activity).

**Results** From the overall sample, 11% developed CHD and 8% dementia during 12 year study period. After controlling for sociodemographic factors, we found that an increase in the AL index was associated with a higher risk of CHD (Odds Ratio (OR)=1.13 (95% Confidence Intervals (CI) 1.06–1.20)); but not with dementia (OR)=1.03 (95% CI) 0.97 to 1.10)). Further adjustment for the role of lifestyle behaviours slightly attenuated the association with CHD (OR)=1.09 (95% CI) 1.02 to 1.17), but did not explain it fully.

**Conclusion** Our results showed that a higher cumulative physiological burden represents a predictor of subsequent CHD, supporting the hypothesis that a cumulative measure of 'biological dysregulation' could act as an early determinant of atherosclerosis and CHD. However, our results do not indicate that the cumulative biological risk plays a pivotal role in the aetiology of dementia. The fact that dementia is slightly underestimated in this study, may mask the real association with specific metabolic and inflammatory markers.

## OP23 ASSOCIATIONS BETWEEN LIFETIME HAZARDOUS DRINKING AND ASSOCIATIONS BETWEEN LIFETIME HAZARDOUS DRINKING AND BIOMARKERS OF CARDIOMETABOLIC HEALTH AND LIVER FUNCTION AMONG OLDER ADULTS: FINDINGS FROM THE WHITEHALL II PROSPECTIVE COHORT STUDY

<sup>1</sup>L Ng Fat\*, <sup>2</sup>S Bell, <sup>1</sup>A Britton. <sup>1</sup>Epidemiology and Public Health, University College London, London, UK; <sup>2</sup>Public Health and Primary Care, University of Cambridge, Cambridge, UK

10.1136/jech-2018-SSMabstracts.23

**Background** Hazardous drinking among older adults is a growing concern, however there is limited research on the effect of chronic versus acute hazardous drinking among older people, and how the effects vary across life. This study among older adults, explores the association of positive AUDIT-C