

1.4 CARDIOVASCULAR

Chair: Dr. Susana Sans, Spain

01-4.1 EXPLAINING RECENT CORONARY HEART DISEASE MORTALITY TRENDS IN ENGLAND BY SOCIOECONOMIC CIRCUMSTANCES, 2000–2007

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Introduction The continuing fall in coronary heart disease mortality rates is widely celebrated. However, the impact of public policies and treatments is poorly quantified and hardly ever by socio-economic group.

Methods Using a previously validated epidemiological model we estimated the contribution of risk factor changes and evidence-based treatments to reduce CHD mortality in adults aged over 25 years between 2000 and 2007 in England, both overall and by deprivation quintiles.

Results CHD mortality rates fell by 35% (219 to 142 deaths per 100 000), resulting in 38 070 fewer deaths in 2007 compared with 2000. Decreases in major cardiovascular risk factors were generally modest accounting for –37% of the total decrease in CHD mortality overall. This ranged from –50% in the most deprived quintile to –30% in the most affluent. The biggest contribution came from a fall in systolic blood pressure (–33%). Other gains were modest: total plasma cholesterol (–6%), smoking (–4%) and inactivity (–2%). Furthermore, these benefits were negated by increases in BMI and diabetes (+11%).

Treatments accounted for approximately half the mortality decline across all social groups. The largest contributors were medical therapies in community settings for lipid reduction (–14%), chronic angina (–13%) and secondary prevention (–11%).

Conclusions Much of the fall in CHD mortality in England between 2000 and 2007 was attributable to medical therapies, evenly distributed across social groups. This was unexpected, and probably reflects frustratingly small recent decreases in major cardiovascular risk factors, compounded by continuing rises in obesity and diabetes.

01-4.2 INDIVIDUAL PARTICIPANT ANALYSIS OF SECULAR TRENDS IN CARDIOVASCULAR MORTALITY IN UK WOMEN, 2000–2009

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Introduction Cardiovascular mortality has declined rapidly in recent decades in many developed countries. Although determinants of these trends have been investigated in ecological studies, little evidence has so far been available from individual participant data.

Methods The Million Women Study is a prospective cohort study of approximately 1.3 million women from England and Scotland, recruited in 1996–2001. For women 50–69 years of age, trends in mortality due to cardiovascular causes (International Classification of Diseases, version 10: I00–I99) were examined in age-period-cohort analyses of individual participant data, linked to death registrations. The first 4 years of follow-up for each woman were excluded to account for an initial healthy cohort effect.

Results After exclusion of the first 4 years of follow-up, a total of 8349 cardiovascular deaths occurred in women aged 50–69 years during 2000–2009. In this period, there was a 5% (95% CI 4 to 6%) overall annual reduction in cardiovascular mortality. Baseline body mass index, smoking status, alcohol consumption, socioeconomic status and geographical region were each strongly associated with cardiovascular mortality in multivariate models ($p < 0.001$), as expected. However, there was no strong evidence of differing trends in cardiovascular mortality across levels of these risk factors, consistent with little interaction between the risk factors and time trends in cardiovascular mortality.

Conclusion In this cohort of women from England and Scotland, the recent secular decline in cardiovascular mortality was evident both in high and in low cardiovascular risk individuals, according to several lifestyle and socioeconomic risk factors.

01-4.3 SEASONAL VARIATION IN BLOOD PRESSURE AMONG CHINESE ADULTS: THE KADOORIE BIOBANK STUDY OF 0.5 MILLION PEOPLE IN CHINA

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Introduction Seasonal variation in blood pressure and its association with outdoor air temperature has been reported in several studies. However, large population-based studies are few and data from developing countries such as China are limited.

Methods Cross-sectional data from the Kadoorie Biobank Study were used to relate seasonal variation in systolic blood pressure (SBP) to outdoor air temperature in 510 000 Chinese adults aged 30–79 recruited during 2004–2008 at 10 widely separated study sites. Analyses related mean SBP—overall and in subgroups of the population—to mean local air temperature on the day of recruitment.

Results SBP was strongly inversely associated with temperature within all 10 areas studied, at least above 5°C, with a mean rise of 5.7 (SE 0.04) mm Hg per 10°C fall in outdoor temperature. The mean difference in SBP between summer (Jun–Aug) and winter (Dec–Feb) was 10 mm Hg, and was more extreme in rural than in urban areas (12 vs 8 mm Hg). The association was slightly stronger in older people, at lower body mass index, and in people taking antihypertensive medications. At low temperature the association was greatly attenuated in participants with central heating in their home.

Conclusion SBP is strongly inversely associated with outdoor temperature in Chinese adults, across a range of climatic exposures. Season or temperature and access to central heating should be considered a source of variation in epidemiological studies of blood pressure and in the clinical management of hypertension.

01-4.4 FRAMINGHAM STROKE RISK PROFILE AND COGNITIVE DECLINE IN MIDDLE AGE: THE WHITEHALL II STUDY

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Background The relationship between stroke risk and cognitive ageing has not been adequately studied in non-elderly populations.