

during adolescence and therefore less tied to socioeconomic position. Many participants saw the individualised concept of ‘drive to succeed’ as pivotal for the transition to adulthood, claiming the possessing this quality made it possible to achieve in education or employment regardless of upbringing or structural factors. The study highlighted class stigma, with some young people from low socioeconomic backgrounds avoiding health risk behaviours such as tobacco smoking or hazardous alcohol consumption as a strategy to evade further stigmatisation.

Conclusion While individual agency was highlighted by many participants, family support was recognised as essential for navigating adolescence in relation to health behaviours and socioeconomic life trajectories. Class stigma related to health risk behaviours was either experienced or witnessed by young people throughout their adolescence. Therefore, while quantitative data suggest that youth from low SES backgrounds engage in more health risk behaviours, public health interventions should adopt measures to avoid further stigmatising these young people.

OP50

ABSTRACT WITHDRAWN

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Non-Communicable Disease: Risk Factors

OP51

PREDICTORS OF CARDIOVASCULAR DISEASE IN WOMEN WITH HYPERTENSIVE DISORDERS OF PREGNANCY

¹ZP Pasdar*, ¹DTG Gamble, ¹PKM Myint, ²SB Bhattacharya. ¹Ageing Clinical and Experimental Research (ACER) Team, University of Aberdeen, Aberdeen, UK; ²Obstetrics and Gynaecology, Aberdeen Centre for Women's Health Research, University of Aberdeen, Aberdeen, UK

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Background Whilst international guidelines recognise hypertensive disorders of pregnancy (HDP) as a major risk factor for premature cardiovascular disease (CVD) in women, there is a paucity of recommendations for how to identify those with such high risk. We aimed to determine the predictors of CVD in women with a history of HDP.

Methods Eligible women were identified from the Aberdeen Study of Cardiovascular Health in Women (ASCHW) and European Prospective Investigation into Cancer (EPIC)-Norfolk prospective cohorts and they were followed for incident CVD events through record linkage using ICD 9/10 in both cohorts. Of 4,186 women with a history of HDP identified, 3,468 attended clinic assessment. Missing data were handled using multiple imputation. We examined the relationship between HDP and incident cardiovascular events by carrying out three separate univariate and multivariable logistic regression analyses: lifestyle questionnaire variable analysis, analysis including examination variables and plasma cardiovascular biomarker analysis. The final model consisted of statistically significant predictors (p-value<0.05) derived from the three analyses. Validity of the model was assessed by discrimination (c-statistic) and calibration (Hosmer-and-Lemeshow test).

Results Selected predictors for CVD in women with HDP in the final model were age over 49 years, no university education, high BMI, total cholesterol, triglyceride and plasma fibrinogen; usage of aspirin and lipid lowering medications; hypertension, family history of heart disease, repeated HDP exposure, and the cohort population. All predictors in the final model were statistically significant except total cholesterol levels. The risk factors which conferred the greatest odds ratios of CVD (≥ 2 -fold odds) were: age beyond 49 years (1.99; 95% CI 1.57–2.54), hypertension (2.84; 95% CI 2.36–3.41), aspirin users (2.18; 95% CI 1.54–3.08), having morbidly obese BMI (2.16; 95% CI 1.54–3.04) and the EPIC-Norfolk population (12.57; 95% CI 9.85–16.04). Median AUC was 0.82 and calibration ranged from <0.001 to 0.003 in imputed datasets.

Conclusion We have identified significant predictors of CVD in women with a history of HDP. This suggests that women with a history of HDP should be followed up from the age of 49 years. Biomarkers such as triglyceride and fibrinogen should be monitored, particularly if women have hypertension, high BMI, a family history of CVD or have had repeated exposure to HDP. Further external validation work is recommended to confirm the clinical utility of the proposed predictors of CVD.

OP52

ASSOCIATION BETWEEN CARDIOVASCULAR HEALTH AND STROKE IN OLDER BRITISH MEN: FINDINGS FROM THE BRITISH REGIONAL HEART STUDY

¹A Ahmed*, ²SM Pinto Pereira, ¹O Papacosta, ¹LT Lennon, ³P Whincup, ¹SG Wannamethee. ¹Primary Care and Population Health, University College London, London, UK; ²Epidemiology and Public Health, University College London, London, UK; ³Population Health Research Institute, St George's University of London, London, UK

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Background The American Heart Association's model of ideal cardiovascular health (CVH), based on 7 well-known and modifiable health factors (body mass index, blood pressure (BP), glucose, cholesterol, physical activity, smoking and diet - Life's Simple 7 or LS7) was developed to promote primordial prevention of cardiovascular disease (CVD), including stroke. Stroke burden rises sharply with age. However most research exploring CVH has been conducted in middle-aged participants. In the British Regional Heart Study (BRHS), we prospectively explored associations of each LS7 factor and composite CVH scores with stroke in middle and older age; and associations between CVH trajectories and stroke incidence in later life.

Methods The BRHS is a prospective study of men recruited in 1978–1980 (aged 40–59y, baseline) and followed up for CVD events. The men were re-examined at 20 years (Q20). All components of LS7 were measured at both time points except baseline diet. Men without pre-existing CVD were followed from baseline (mean age 50y, n=6612) and again from Q20 (mean age 69y, n=3798) for a median period of 20y and 16y respectively. Cox models estimated risk of stroke as adjusted hazard ratios (HRs) for ideal and intermediate vs poor levels of LS7 factors; for composite CVH scores; and for 4 CVH trajectory groups based on transitions in CVH status (low/high) from baseline to Q20 - Low-Low, Low-High, High-Low and High-High.

Results Stroke event rates for baseline and Q20 cohorts were 3.1 and 8.4 per 1000 person years respectively. At baseline, healthier levels of three LS7 - BP, physical activity and smoking were associated with reduced risk of stroke. HRs [95% Confidence Intervals] for intermediate and ideal (vs poor) were 0.62 [0.49, 0.79] and 0.41 [0.24, 0.69] for BP; 0.68 [0.49, 0.95] and 0.55 [0.39, 0.79] for physical activity; and 0.68 [0.54, 0.86] and 0.57 [0.43, 0.77] for smoking. For exposures measured at Q20, only BP maintained a protective association (HRs 0.84 [0.66, 1.06] and 0.50 [0.30, 0.84] for intermediate and ideal levels respectively). Protection from each unit increase in overall CVH scores also weakened with age. With reference to the Low-Low trajectory, all trajectories were generally associated with reduced risk. The HRs were Low-High 0.57 (0.41, 0.79); High-Low 0.85 (0.61, 1.19) and High-High 0.77 (0.58, 1.03) respectively.

Conclusion Not all components of CVH individually influence stroke. While the association between CVH and stroke weakens with age, improving overall CVH may bring some benefit even in later life.

OP53

MOLECULAR BIOMARKERS IN PERIPARTUM CARDIOMYOPATHY: A SYSTEMATIC REVIEW AND META-ANALYSIS

¹S Cherubin*, ²T Peoples, ³J Gillard, ⁴S Lakhali-Littleton, ¹J Kurinczuk, ¹M Nair. ¹Nuffield Department of Population Health, University of Oxford, Nuffield Department of Population Health, Oxford, UK; ²Mailman School of Public Health, Columbia University, New York, USA; ³Medical Science Division, University of Oxford, Oxford, UK; ⁴Department of Physiology, Anatomy and Genetics, University of Oxford, Oxford, UK

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Background Peripartum cardiomyopathy (PPCM) is a complication of pregnancy in which symptoms of heart failure with reduced ejection fraction (<45%) develop during pregnancy or shortly after delivery. The aetiology and pathophysiology of the disease are poorly understood, but there is some evidence that PPCM is associated with a) altered levels of prolactin (PRL) cleavage products, and b) anaemia. However, the strength of the evidence has not been systematically ascertained. We conducted a systematic review and meta-analysis to: 1) assess the strength of the evidence for PRL cleavage and iron deficiency anaemia as mechanisms for PPCM, 2) identify other biomarkers associated with PPCM.

Methods The search strategy for the systematic review was a mix of automated and manual searches, and included both published and unpublished literature. We included observational studies from across the world reporting levels of laboratory biomarkers in women diagnosed with PPCM and in controls without pre-existing CVD, without any restriction of language or time-period. We assessed the risk of bias and quality of the evidence across studies using standard tools. Pooled Standardized Mean Difference (SMD) were generated using a random effects model for the difference in levels of biomarkers comparing PPCM cases to healthy controls.

Results Out of 2,425 unique research articles, 78 were selected for full text screening. We extracted 31 papers, 16 of which were included in the meta-analysis. Two papers assessed the association of PRL with PPCM and reported that PPCM cases had higher levels of total PRL. Other markers investigated in PPCM patients included inflammatory

markers, markers of myocardial dysfunction, vascular markers, and micronutrients. Generally, PPCM cases had higher serum levels of CRP (SMD: 2.281, 95% CI: 0.114; 4.448), white blood cells (SMD: 0.437, 95% CI: 0.095; 0.778), natriuretic peptides (SMD: 3.453, 95% CI: 2.174; 4.695), cardiac troponins (SMD: 1.108, 95% CI: 0.690; 1.526), liver enzymes (SMD: 0.651, 95% CI: 0.075; 1.228), and creatinine (SMD: 0.513, 95% CI: 0.33; 0.694), but lower levels of albumin (SMD: -0.662, 95% CI: -0.971; -0.352), selenium (SMD: -0.744, 95% CI: -1.485; -0.002), and haemoglobin (SMD: -0.449, 95% CI: -0.639; -0.259). We did not find any studies that analysed the association between levels of iron markers and PPCM.

Conclusion More robust epidemiologic studies are needed to strengthen the link between PRL and PPCM, identify new molecular pathways involved in the development and progression of PPCM, and elucidate the role of iron status in the pathophysiology of the disease.

OP54

ENGAGEMENT IN LEISURE ACTIVITIES AND DEMENTIA RISK IN THE ENGLISH LONGITUDINAL STUDY OF AGEING

P Almeida-Meza*, AP Steptoe, D Cadar. *Behavioural Science and Health, UCL, London, UK*

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Background Participation in leisure activities has been associated with a lower risk of dementia. It is unclear whether increased participation in leisure activities lowers the risk of dementia or participation in leisure activities declines during the preclinical phase of dementia. We examined the frequency of participation in leisure activities and derived cognitive-activity and social activity scales and investigated dementia incidence over 15 years of follow-up in a representative sample of the English population.

Methods Data were 12,280 participants aged 50+ from the English Longitudinal Study of Ageing, free from dementia at their baseline assessments being either wave 1 (2002–2003), 3 (2006–2007), or 4 (2008–2009), and followed up until wave 8 (2016–2017). Leisure activities were derived using a standardised questionnaire derived by Nucci et al. and grouped into the cognitive and social type of leisure activities. Cox proportional hazards regression models were used to estimate the hazard ratios (HR) of dementia in relation to the cognitive and social type of leisure activities using the age of survival as the time metric.

Results During the follow-up period, 602 participants aged 56 to 99 developed dementia. Medium (HR 0.79, 95% CI 0.65–0.94, p=0.013) and higher levels (HR 0.62, 95% CI 0.46–0.83, p=0.002) of engagement in cognitive leisure activities were associated with a lower risk of dementia by survival age in a model adjusted for sex and marital status. Further adjustment for wealth explained the association with medium level, but not with higher cognitive engagement (HR 0.72, 95% CI 0.53–0.98, p=0.036). Further subsequent adjustment for CHD, stroke, hypertension did not substantially modify these associations. An independent analysis of the engagement in the social type of leisure activities showed a similar pattern with protection for higher levels of engagement (HR 0.75, 95% CI 0.63–0.90, p=0.002) in a model adjusted for sex and marital status. However, further adjustment for the overall wealth has explained this association.