

Methods We examined the associations of maternal gestational hypertension and preeclampsia with offspring vascular outcomes (endothelial dysfunction assessed by radial artery flow-mediated dilatation, arterial stiffness assessed by carotid to radial pulse wave velocity, brachial artery distensibility and BP) and with markers of inflammation (C reactive protein and Interleukin-6), lipids (triglycerides, high density lipoprotein cholesterol, non-HDLc) and apolipoproteins A1 and B assessed at age 9–12 years in a UK cohort (N=3127–4624).

Results We confirmed previous associations of both preeclampsia and gestational hypertension with offspring systolic BP (confounder adjusted mean differences: 2.37 mm Hg (95% CI 1.66 to 3.08) and 2.17 mm Hg (95% CI 0.39 to 3.95) comparing offspring of women with gestational hypertension and preeclampsia, respectively, with normotensive women) and diastolic BP (1.31 mm Hg (95% CI 0.69 to 1.92) and 1.40 mm Hg (95% CI –0.14 to 2.95)). However, we found no associations of either preeclampsia or gestational hypertension with endothelial dysfunction, any of the other vascular outcomes, inflammatory markers, lipids or apolipoproteins.

Conclusion The specific association of both preeclampsia and gestational hypertension with higher BP in offspring supports the underlying mechanism being due to genetic variants related to higher BP, rather than intrauterine mechanisms related to inflammation and endothelial dysfunction.

01-2.5

FALLIBILITY IN ESTIMATING INDIRECT EFFECTS: MISCLASSIFICATION OF THE MEDIATOR MATTERS MORE THAN COLLIDER BIAS

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T Blakley,* K Carter, S McKenzie. *University of Otago, Wellington, New Zealand*

Introduction Smoking is the largest single cause of preventable mortality and morbidity in Australia and many countries globally. The limited existing evidence suggests that smokers use fewer general practitioner (GP) services, but more hospital services, than non-smokers, and may not be benefitting from secondary prevention. We investigated use of GP services by Australians aged 45 years and over according to smoking status.

Methods Analysis of self-reported questionnaire data from 96,522 participants in a population-based cohort study (the 45 and up Study), linked with data for national health insurance (Medicare) benefit payments and out-of-pocket-costs (OOPC). Generalised linear models were used to explore the relationships between smoking status, benefits paid and OOPC incurred. RRs were adjusted for age, sex, rurality, income, education, bodyweight, self-rated health, functional status and chronic conditions.

Results Current smokers were much less likely than non-smokers to be in the top cost decile for either benefits (RR 0.76, 95% CI 0.69 to 0.84) or OOPC (RR 0.61, 95% CI 0.55 to 0.68). Smokers used fewer preventive GP services (health checks, screening).

Conclusion Data linkage allowed complete capture of GP service use for a large population-based sample. After adjusting for a wide variety of access- and need-related factors, we found that Australian smokers are less likely than non-smokers to incur high costs for GP services. This held both for services provided for free, and those paid for by patients. Smokers may seek care less actively, perhaps because they are less health-conscious, or perhaps because they are avoiding censure from health professionals.

01-2.6

INTERGENERATIONAL CONTINUITY OF GESTATIONAL DURATION IN THREE GENERATIONS OF SWEDISH MALES AND FEMALES

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¹I Koupil,* ²R Silverwood. ¹Stockholm University/Karolinska Institute, Stockholm, Sweden; ²London School of Hygiene and Tropical Medicine, London, UK

Objective We analysed associations between gestational duration in grandchildren and their biological grandparents.

Methods The Uppsala Birth Cohort Multigenerational Study includes manually collected archive data on a representative cohort of males and females born in Uppsala, Sweden 1915–1929 and information on descendants of the cohort obtained through linkage to routine data registers. Using path analysis, we analysed 7915 grandparents and their 26 423 grandchildren, where the grandparent, the grandchild and the intermediate biological relation were singletons. Maternal grandmothers, maternal grandfathers, paternal grandmothers and paternal grandfathers were considered separately. Models were adjusted for social variables and fitted separately for male and female grandchildren due to evidence of effect modification by sex.

Results Gestational duration in grandparents was positively associated with gestational duration in their grandchildren. The observed direct effects are equivalent to a 0.3–0.4 (0.01 ≤ p ≤ 0.07) day increase in the grandchild's gestational duration for each additional week in the maternal grandparents' gestational duration and 0.1–0.2 (p ≥ 0.2 in all models) day increase in the grandchild's gestational duration for each additional week in the paternal grandparents' gestational duration. Distinct and gender specific patterns of statistically significant associations were observed for risk of preterm and post-term birth across generations. Birthweight-for-gestational age in maternal grandfathers was positively associated with gestational duration in their grandchildren while birthweight-for-gestational age in paternal grandfathers was inversely related to gestational duration in their grandsons.

Conclusion Gestational duration in maternal grandparents is positively associated with gestational duration in their grandchildren. Birthweight-for-gestational age in paternal grandfathers influences gestational duration in their grandchildren negatively.