Maternal and Child Health, 2: Free Papers

Abstract #: 1195
The Association of Maternal Age with Birth Weight and Gestational Age: A Cross-Cohort Comparison.

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INTRODUCTION: High prevalence of low birth weight (LBW) and preterm birth has been reported in adolescent and older mothers, but most studies fail to address potential confounding for SEP (socioeconomic position). We aimed to examine associations of maternal age with LBW and preterm birth in four cohorts from a middle- and a high-income country, where the patterning of maternal age by SEP is likely to differ.

METHODS: Population-based birth cohort studies were carried out in the city of Pelotas, Brazil in 1982, 1993 and 2004, and in Avon, UK in 1991 (ALSPAC), with 4581, 4761, 3225 and 8009 births, respectively. Newborns weighing <2500g were classified as LBW. Births before the 37th week of pregnancy were classified as preterm.

RESULTS: Low SEP was associated with younger age at childbearing in all cohorts, but the magnitudes of these associations were stronger in ALSPAC than in Pelotas. Inverse associations of SEP with LBW and preterm birth were observed in all cohorts. U-shaped associations were observed between maternal age and odds of LBW in all cohorts. However after adjustment for SEP, odds of LBW decreased or disappeared for young mothers (<20yrs) and remained or increased for older mothers (35+yrs). When we pooled results across all four cohorts (P-value for interaction = 0.9) to examine very young mothers as a separate group, the adjusted odds of having a LBW infant compared to 25–29yrs for <16yrs and 35+yrs were 1.48 (95% CI 1.00; 2.20) and 1.66 (95% CI 1.36; 2.02), respectively. The corresponding results for preterm birth were 1.80 (95% CI 1.23; 2.64) and 1.38 (95% CI 1.15; 1.67), respectively.

CONCLUSIONS: Confounding by SEP explains much of the excess risk of LBW and preterm among babies born to teenage mothers as a whole, but not for mothers aged <16 or 35+. Given that the
proportion of women becoming pregnant at <16yrs is smaller than for those 35+yrs, the population burden is greater for older age.

Abstract #: 2801
Maternal Obesity and Fetal Deaths: A Brazilian Cross-Sectional Study.
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INTRODUCTION: Obesity is associated to negative outcomes for both mother and fetus. In this context we estimated the association between maternal obesity and the occurrence of fetal deaths in a representative sample of the Brazilian reproductive age women.

METHODS: We conducted a cross-sectional study based on secondary data from the last Brazilian Demographic and Health Survey (DHS) of 2006. We studied 5760 women of reproductive age (15-49 years old) who participated in the survey. Maternal obesity was defined when body mass index (BMI) was ≥30 kg/m² and waist circumference (WC) ≥88cm. We also evaluated the Waist-to-Height-Ratio (WHR). Fetal death was considered when the women declared its occurrence after 20 weeks of gestation. Data was analyzed by using Stata 12.0 and logistic regression models were used to estimate the association between maternal obesity and the occurrence of fetal deaths.

RESULTS: Prevalence of fetal deaths were 11.4%. Each increase of BMI, WC and WHR also increased approximately 6, 3 and 65% of chance of fetal death. These associations remained significant after adjusting for maternal age, parity, skin color, household income, maternal education and smoking status. Moreover, abdominal obesity (WC ≥88 cm) was positively associated with fetal deaths (OR = 2.91, 95% CI 1.32–6.44).

CONCLUSIONS: These results show a significant association between maternal obesity and the occurrence of fetal deaths among Brazilian women of reproductive age.

Abstract #: 3233
Gestational Syphilis and Stillbirth in Latin America and the Caribbean.
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INTRODUCTION: The syphilis incidence rate in Latin America and the Caribbean is the highest in the world. Gestational syphilis can lead to stillbirth, if left untreated. We aimed to convey the present relationship between gestational syphilis and stillbirth in the region.

METHODS: We analyzed births from the Perinatal Information System occurring between 1 January 2009 and 31 December 2012, quantifying the current relationship between gestational syphilis and stillbirth, and examining potential confounders. We did binary logistic regression to assess the association between syphilis and stillbirth, and examining potential confounders. We did binary logistic regression to assess the association between gestational syphilis and stillbirth.

RESULTS: Our final model included 368,151 births, of which 3875 (1.1%) were exposed to gestational syphilis. 1461 births (0.4%) were stillbirth, and 29 stillborn babies were born to women with syphilis. Gestational syphilis is associated with having 1.880 times the odds of stillbirth, controlling for country, congenital defects, gestational age at labor, mother’s age, and previous stillbirths.

Controlling for all other covariates in the final model, major congenital defects result in 25.898 times the odds of stillbirth. The odds of stillbirth are 2.845 when the mother has had previous stillbirth (s). As gestational age increases, the odds of stillbirth decrease, with each week increase being associated with 0.809 times the odds of stillbirth.

CONCLUSIONS: Gestational syphilis is a major contributing factor for stillbirths in Latin America and the Caribbean. New point-of-care syphilis testing allows healthcare providers to test and treat women at the same visit, which should be implemented to address loss to follow-up. Interventions targeting gestational syphilis are highly cost-effective and, along with point-of-care testing, should be implemented across the region.

Abstract #: 3466
Risk of Congenital Anomalies in Children of Mothers with Coeliac Disease: A United Kingdom Population-based Cohort Study.
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INTRODUCTION: Folic acid (FA) deficiency is associated with neural tube defects (NTD) and possibly with other congenital anomalies. Research has shown that patients with newly diagnosed coeliac disease (CD) have a low serum FA level. The objective was to examine the risk of major congenital anomaly (MCA) and specific anomaly types in children of mothers with CD compared to those without CD.

METHODS: We used a cohort of 562,332 live-born singletons of mothers with and without CD between January 1990 and January 2013 from The Health Improvement Network, a nationally representative primary care database in the United Kingdom. We calculated absolute risks of MCA in children whose mothers had CD and according to whether this was diagnosed or undiagnosed in pregnancy. Logistic regression with a generalised estimating equation was used, adjusting for maternal socio-demographics, periconception high-dose FA prescriptions and comorbidities.

RESULTS: The MCA risk in 1,880 children of mothers with CD was 2.9% (55 exposed cases), similar to children of mothers without CD (2.8%; adjusted odds ratio[AOR] = 1.00, 95% confidence interval [95% CI] 0.75–1.31). The risk was slightly higher in 950 children of the undiagnosed group (3.6%; AOR = 1.18, 95% CI 0.82–1.70) than in 930 children of the diagnosed group (2.3%, AOR = 0.79, 95% CI 0.51–1.22) but neither were statistically significant. There was a 3-fold increase of nervous system anomalies in the undiagnosed group compared to the non-CD group (AOR = 3.07, 95% CI 1.10–8.59) and these women were all diagnosed at least four years after the index childbirth. This latter result was based on five exposed cases (two microcephaly, one micrencephaly, one hydrocephalus and one spina bifida).

CONCLUSIONS: Children of mothers with CD have a similar risk of having a MCA to the general population; however, the risk may be slightly higher in the undiagnosed group. A potential increase of nervous system anomalies, not specifically NTD, should be confirmed by further studies.