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| **Asthma, gestational diabetes mellitus and adverse perinatal outcomes** |
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| **Introduction/Aim:** Asthma and gestational diabetes mellitus (GDM) are both common medical conditions in pregnancy and are associated with adverse perinatal outcomes. Our aim was to compare clinical characteristics and demographics between women with and without asthma, who develop and do not develop GDM, and compare the incidence of adverse perinatal outcomes in women with a concomitant diagnosis of asthma and GDM, compared to women who have neither or only one diagnosis.**Methods:** Using a large-scale retrospective observationalstudy design, data on clinical characteristics, maternal and perinatal outcomes were collected via electronic obstetric records from antenatal clinics across two local health districts in New South Wales, Australia. Exposure variables were diagnosed asthma or GDM. Main outcome measures were diagnosis of hypertensive disorders in pregnancy, caesarean birth, preterm birth, low birth weight, macrosomia, respiratory distress syndrome, congenital anomaly and neonatal death. Multivariable regressions were used.**Results:** In 25,665 women, 11.3% of women had GDM only, 9.8% had asthma only and 1.4% had GDM and asthma. Current maternal asthma versus no maternal asthma was associated with increased risk of infant respiratory distress syndrome (aRR 1.12,95%CI 1.01, 1.25) and GDM vs no GDM with increased risk of maternal hypertensive disorders (aRR 1.32, 95%CI 1.16, 1.50), caesarean birth (aRR 1.18,95%CI 1.12, 1.24) and infant respiratory distress syndrome (aRR 1.26, 95%CI 1.14, 1.40). There was no evidence for an interaction between the effects of asthma and gestational diabetes on any perinatal outcomes.**Conclusion:** A diagnosis of either maternal asthma or GDM increased the risk of infant respiratory distress. A diagnosis of GDM also increased the risk of maternal hypertensive disorders and caesarean birth. Our results did not reveal a synergistic effect of a dual diagnosis of asthma and GDM on perinatal outcomes. Examination of asthma severity, control, medication use and adherence may provide further insights.**Grant Support:** School of Medicine and Public Health, College of Health Medicine and Wellbeing University of Newcastle |