Variations in Year of Maternal Age and Maternal Birthweight among Women Who Deliver Infants with Gastroschisis in Washington State, 1987-2006

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Background: Gastroschisis is a serious birth defect where the intestines develop outside the body. The prevalence is 3-4 in 10,000 live births and is increasing. Young maternal age and first pregnancy are consistently cited risk factors for gastroschisis. Whether rate of gastroschisis is related to specific year of mothers' age should be investigated. Maternal low birthweight and teenage pregnancies are associated with adverse birth outcomes. It is unknown whether a relationship exists between maternal birthweight (MBW) and the age at which a woman delivers an infant with gastroschisis.

Methods: Descriptive analyses were conducted and rates of gastroschisis births, stratified by year of mothers' age, were determined using 1987-2006 Washington State birth certificate and Comprehensive Hospital Abstract Reporting System linked data. In a subanalysis exploring MBW, the vital records of infants with gastroschisis were linked with the vital records of mothers who were born in Washington State between 1968 and 1990. Mean MBWs, stratified by maternal year of age at delivery of an infant with gastroschisis, were compared via one-way analysis of variance.

Results: We identified 259 infants with gastroschisis born in Washington State during the study period. Previous studies report high rates of gastroschisis among infants of adolescent mothers, but not whether rate is associated with youth by year of age. Our results show that, when stratified by year of maternal age, the rate was highest among mothers aged 18 years (9.3 per 10,000 live births, 95% CI 2.9 – 12.2). We accomplished 36% linkage for infant-mother pairs (N=93) for the subanalysis. Comparisons indicated that MBW had very little relationship to the age at which mothers delivered an infant with gastroschisis. However, we observed a trend of increasing MBW with increasing mean maternal age.

Conclusions: Our data show that pregnancies by year of maternal age, specifically among teens, are at highest risk of delivering infants with gastroschisis. Public health interventions to reduce teenage pregnancies should incorporate this among other messages about adverse birth outcomes associated with young maternal age. We recommend further study of how birthweight of a previous generation may affect the prevalence of gastroschisis.

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