Labor Induction or Augmentation and Autism

ABSTRACT: Functional oxytocin deficiency and a faulty oxytocin signaling pathway have been observed in conjunction with autism spectrum disorder (ASD). Because exogenous synthetic oxytocin commonly is administered for labor induction and augmentation, some have hypothesized that synthetic oxytocin used for these purposes may alter fetal oxytocin receptors and predispose exposed offspring to ASD. However, current evidence does not identify a causal relationship between labor induction or augmentation in general, or oxytocin labor induction specifically, and autism or ASD. Recognizing the limitations of available study design, conflicting data, and the potential consequences of limiting labor induction and augmentation, the Committee on Obstetric Practice recommends against a change in current guidance regarding counseling and indications for and methods of labor induction and augmentation.

Autism spectrum disorder (ASD) is characterized by social and communicative developmental deficits and repetitive, restrictive, or unusual behaviors (1). Autism spectrum disorder includes the diagnosis of autism, Asperger syndrome, and pervasive developmental disorder not otherwise specified (1–2). Approximately 1 in 88 American children is affected by ASD, although the reported prevalence varies widely, exhibiting a 4:1 male predominance and racial and ethnic variation (3). Although the cause of ASD is unclear, it demonstrates a strong genetic predisposition and multifactorial influences. A wide variety of exposures, including many perinatal factors, have been linked to ASD but the suggested associations in many cases are weak, inconsistent, or both among studies, and cannot be equated with a cause and effect relationship (4–9).

Recent research suggests a role for endogenous oxytocin in normal human social and cognitive behavioral development (10). Functional oxytocin deficiency and a faulty oxytocin signaling pathway have been observed in conjunction with ASD (11). Because exogenous synthetic oxytocin commonly is administered for labor induction and augmentation, some have hypothesized that synthetic oxytocin used for these purposes may alter fetal oxytocin receptors and predispose exposed offspring to ASD (12). Studies to date that have investigated a potential link between oxytocin and ASD have a number of limitations, such as small size, retrospective data collection, and limited control for possible confounding variables. Such characteristics reduce the value of these studies and suggest the need for more research. Among nine studies summarized by Guinchat et al in a 2012 review (13), three studies (7–9) demonstrated a weak but significant association between labor induction and autism in univariate analysis, and six studies (6, 14–18) found no such association. Only one study found an association that persisted after adjustment for potentially confounding variables (7). A 2011 meta-analysis found insufficient evidence to suggest an association between labor induction or augmentation and an increased risk of autism (odds ratio [OR], 1.21; 95% confidence interval [CI], 0.9–1.62) (19).

A larger 2013 analysis reported an increased odds ratio of autism among children born following induced or augmented labor (20). Data for this study were obtained from the North Carolina Detailed Birth Record and Education Research databases linked with children’s school records and included 5,500 children with autism (as indicated in their educational records) from among 625,042 live births. Among males, multivariate logistic regression showed a weak association between ASD
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References


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