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Intrapartum Oxytocin Use in Denmark and the Risk of Autism in Offspring.

S. Dalsgaard, PhD1,2, J. F. Leckman, MD3, C. S. Carter, PhD4, J. C. Harris, MD5, N. Uldbjerg, MD6, T. B. Henriksen, PhD7, M. Thygesen, MA8, P. B. Mortensen, MD1 and E. Agerbo, PhD7  
1Aarhus University, Aarhus V, Denmark, 2Hospital of Telemark, Krageroe, Norway, 3Yale School of Medicine, Yale University, New Haven, CT, USA, 4University of North Carolina, Chapel Hill, NC, USA, 5The Johns Hopkins University School of Medicine, Baltimore, MD, USA, 6Aarhus University Hospital, Aarhus N, Denmark, 7Aarhus University, Aarhus, Denmark, 8Aarhus University, 8210, Denmark  

INTRODUCTION: Oxytocin facilitates reproduction and is linked to social interaction and infant-mother bonding. Studies have raised concern about an association between induction of labor [IOL] and augmentation of labor [AOL] with oxytocin and an increased risk of autism in offspring.

METHODS: Cohort study of all singleton live births in Denmark from 2000 through 2009 (557,040 births), with follow-up through 2012. Using Danish population registries, we linked information on intrapartum use of oxytocin, diagnoses of autism in offspring, and a range of potential confounders (including obstetric, geographical factors as well as parental socioeconomic and psychiatric background). We used a propensity-score adjusted survival analysis of the time to diagnosis in offspring with Cox regression to estimate adjusted hazard ratio's [HR] of autism according to IOL and AOL.

RESULTS: Within this cohort 3.4% of all deliveries were induced with oxytocin and 26.8% of deliveries were augmented with oxytocin.  
During 3,881,096 person-years of follow-up, we identified 2110 cases with autism (incidence rate, 54.4 per 100,000 person-years). Among these 560 males with autism were exposed to oxytocin in AOL during 543,063 person-years and 1177 males with autism were not exposed (incidence rates, 103.1 and 81.3 per 100,000 person-years, respectively).  
As compared with deliveries not involving maternal exposure to oxytocin, AOL with oxytocin was associated with a significantly increased risk of autism in male offspring (fully adjusted HR 1.13; 95% confidence interval 1.01–1.26) but not in female offspring (HR 0.99; 0.77–1.27). IOL with oxytocin was not associated with autism in male offspring (HR 0.85; 0.63–1.13) or in female offspring (HR 0.92; 0.51–1.66).

CONCLUSIONS: We found a small significant association between AOL with oxytocin and autism in male offspring. If this finding from our observational study is replicated, it may of major public health importance, given the common use of oxytocin in augmentation of labors.