Fetal cerebral ventricular atria width of 8–10 mm: A possible prenatal risk factor for adolescent treated Attention Deficit Hyperactivity Disorder (ADHD)

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DOI: http://dx.doi.org/10.1016/j.ridd.2015.11.008.

Abstract
The purpose of our research was to study the in-utero and long term post-natal outcome of fetal isolated cerebral ventricular atria width between 8 and 10 mm.

We conducted a retrospective, observational, case–control study, of low risk pregnant women, between 1993 and 2001. One hundred and forty one fetuses with isolated cerebral ventricular atria width between 8 and 10 mm, corresponding to 2–4 standard deviations above the mean, and 309 controls, with atrial width below this level, were included for the analysis.

Clinical data concerning pre and post-natal outcome was retrieved from computerized medical records. Matching of cases with controls was based on age, with a ratio of 2–3 controls per case.

Statistical analysis included: T-test, Chi-Square, and Multiple Logistic Regression analysis.

The study group was characterized by a predominance of male gender, left side involvement, and higher birth weight, compared to the control group.

Long term post-natal follow-up at a mean age of 12.7 years (±1.9) demonstrated an adjusted odds ratio of 2.589 (95% CI 1.415–4.737, p = 0.001), being diagnosed as Attention Deficit Hyperactivity Disorder (ADHD), and treated by Methylphenidate (Ritalin®), during childhood, compared to the control group (23.6% and 10.0% respectively) (p = 0.001). Cerebral atria width was an independent factor, controlled for the only two significant variants between groups, gender and weight over 90th centile.

In conclusions, our preliminary results show that fetuses with prenatal finding of isolated cerebral ventricular atria width between 8 and 10 mm are more likely of being diagnosed and treated as ADHD during childhood.