Maternal breastfeeding and attention-deficit/hyperactivity disorder in children: a meta-analysis

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Abstract

Previous studies have suggested environmental factors may contribute to the risk of attention-deficit/hyperactivity disorder (ADHD). The current meta-analysis examined (1) the difference in the duration of maternal breastfeeding between children with and without ADHD, and (2) the association between maternal breastfeeding and ADHD in children. The data of individual studies were synthesized with a random-effects model. Eleven articles were included in this meta-analysis. Children with ADHD had significantly less breastfeeding duration than controls (Hedges' g = -0.36, 95% confidence intervals (CIs) = -0.61 to -0.11, p = 0.005; difference in means: -2.44 months, 95% CIs = -3.17 to -1.71, p < 0.001). In addition, the rates of non-exclusive breastfeeding in children with ADHD is significantly higher in "under 3 months" (odds ratio (OR) = 1.90, 95% CIs = 1.45 to 2.48, p < 0.001) but lower in "6 to 12 months" (OR = 0.69, 95% CIs = 0.49 to 0.98, p = 0.039) and "over 12 months" (OR = 0.58, 95% CIs = 0.35 to 0.97, p = 0.038) than controls. Children with ADHD received significantly higher rate of exclusive breastfeeding duration "under 3 months" (OR = 1.51, 95% CIs = 1.20 to 1.89, p < 0.001) but lower in "over 3 months" (OR = 0.52, 95% CIs = 0.29 to 0.95, p = 0.033) than controls. Furthermore, an association was found between non-breastfeeding and ADHD children (adjusted OR = 3.71, 95% CI = 1.94 to 7.11, p < 0.001). Our results suggest maternal breastfeeding is associated with a lower risk of ADHD in children. Future longitudinal research is required to confirm/refute these findings and to explore possible mechanisms underlying this association.