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Risk of Congenital Anomalies in Children of Mothers with Coeliac Disease: A United Kingdom Population-based Cohort Study.

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INTRODUCTION: Folic acid (FA) deficiency is associated with neural tube defects (NTD) and possibly with other congenital anomalies. Research has shown that patients with newly diagnosed coeliac disease (CD) have a low serum FA level. The objective was to examine the risk of major congenital anomaly (MCA) and specific anomaly types in children of mothers with CD compared to those without CD.

METHODS: We used a cohort of 562,332 live-born singletons of mothers with and without CD between January 1990 and January 2013 from The Health Improvement Network, a nationally representative primary care database in the United Kingdom. We calculated absolute risks of MCA in children whose mothers had CD and according to whether this was diagnosed or undiagnosed in pregnancy. Logistic regression with a generalised estimating equation was used, adjusting for maternal socio-demographics, periconceptional high-dose FA prescriptions and comorbidities.

RESULTS: The MCA risk in 1,880 children of mothers with CD was 2.9% (55 exposed cases), similar to children of mothers without CD (2.8%; adjusted odds ratio [AOR] = 1.00, 95% confidence interval [95% CI] 0.75–1.31). The risk was slightly higher in 950 children of the undiagnosed group (3.6%; AOR = 1.18, 95% CI 0.82–1.70) than in 930 children of the diagnosed group (2.3%, AOR = 0.79, 95% CI 0.51–1.22) but neither were statistically significant. There was a 3-fold increase of nervous system anomalies in the undiagnosed group compared to the non-CD group (AOR = 3.07, 95% CI 1.10–8.59) and these women were all diagnosed at least four years after the index childbirth. This latter result was based on five exposed cases (two microcephaly, one micrencephaly, one hydrocephalus and one spina bifida).

CONCLUSIONS: Children of mothers with CD have a similar risk of having a MCA to the general population; however, the risk may be slightly higher in the undiagnosed group. A potential increase of nervous system anomalies, not specifically NTD, should be confirmed by further studies.