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Vaccinations May Induce Diabetes Related Autoantibodies in One-Year-Old Children

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Vaccinations have been discussed as one among many environmental candidates contributing to the immune process that later may lead to type 1 diabetes. ABIS (All Babies in Southeast Sweden) is a prospective cohort study following a nonselected birth cohort of general population. In a randomly selected sample collection from 4400 children, GADA and IA-2A have been determined at the age of 1 year.

The information on vaccinations was collected from questionnaires answered by the parents and was related to ß cell autoantibodies. When studying the induction of autoantibodies using the autoantibody level of 90th percentile as cutoff level, hemophilus influenza B (HIB) vaccination appeared to be a risk factor for IA-2A [OR 5.9 (CI 1.4-24.4; p = 0.01)] and for GADA [OR 3.4 (CI 1.1-10.8; p = 0.04)] in logistic regression analyses. Furthermore, the titers of IA-2A were significantly higher (p < 0.01 in Mann-Whitney test) in those children who had got HIB vaccination. When 99th percentile was used as cutoff to identify the children at risk of type 1 diabetes, BCG vaccination was associated with increased prevalence of IA-2A (p < 0.01). We conclude that HIB vaccination may have an unspecific stimulatory polyclonal effect increasing the production of GADA and IA-2A. This might be of importance under circumstances when the ß cell-related immune response is activated by other mechanisms.