

BCG Vaccination and Risk of Atopy in Greenlandic School Children

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The prevalence of allergic diseases has increased dramatically the last decades in western countries. By using a unique collection of stored serum samples, we have demonstrated that the prevalence of atopy among Greenlanders has also increased almost two-fold from 1987 to 1998, and a parallel increase in allergic diseases is likely to have occurred. We do not know which risk factors are responsible for the increase in allergy, but according to the "Hygiene Hypothesis", reduced microbial stimulation of the immune system by infections but also by certain vaccines may play a role. In particular, the attention has been drawn to the BCG-vaccine (bacille Calmette-Guérin), which has been shown to protect against development of allergic disease in some studies, although other studies have not been able to verify this finding. However, most studies have been biased by the fact that they have been performed in countries where BCG-vaccination is either a part of the routine vaccination program or in countries where BCG-vaccination is only administered to high-risk patients. This makes comparisons between vaccinated and unvaccinated subjects difficult, as they will often differ regarding a wide range of other potential risk factors. In Greenland, BCG-vaccination was administered routinely a few days after birth until 1990, where the BCG-vaccination was suddenly taken out of the vaccination program. This gave us a unique opportunity to compare the risk of atopy and allergic diseases in children who were born two years before and two years after vaccination with BCG was stopped. A total of 1,172 children aged 10-14 years and living in four towns on the west coast of Greenland took part in the study corresponding to a participation rate of almost 70%. Children had a blood sample drawn and answered a questionnaire together with their parents regarding atopic diseases. Information on BCG-vaccination was obtained from vaccination protocols at the local health care center. The data are currently being analysed, but the final results will be presented at the scientific meeting.