

Letter to the editor

BCG vaccination does not seem to prevent atopy in children with atopic heredity

In a Letter to the editor (*Allergy*, October 1997), Martinati & Boner (1) raised the question of whether the prevalence of atopy is increased in countries which have stopped their BCG vaccination campaign. We have recently studied this issue (2). In 1975, the general BCG vaccination, given to 95% of all neonates, was withdrawn in Sweden because of side-effects and the low risk of tuberculosis exposure. Currently, fewer than 4% of Swedish-born children are BCG vaccinated; such vaccination is now mainly done because of contact with foreign countries, tuberculosis in close relatives, or parental request. At the same time, IgE-mediated allergy has increased, now affecting about every third child in Sweden (3). We performed a retrospective cohort study of children with atopic heredity, born in Stockholm in 1989–92, which included 216 children who received BCG vaccination before 6 months of age, and 358 age-matched controls who had not been BCG vaccinated (2). A difference in atopy prevalence between the two groups could not be shown by clinical or serologic findings. In the vaccinated group, 12% had one or more positive skin prick tests, and 31% of the children had circulating allergen-specific IgE antibodies, whereas the corresponding figures in the control group were 10% and 27%, respectively. Risk factors for atopic disease were evenly distributed between the two groups. Thus, early BCG vaccination in children with atopic heredity does not seem to affect the development of atopic disease before school age (2). Our results are supported by a recent study of Swedish military conscript registers, where an increased atopy incidence was not demonstrated in the cohort born the year after the general BCG vaccination in Sweden was discontinued in 1975 (4).

The BCG strain used since 1979 in Sweden is Copenhagen 1331, a derivative from the German Behring 1331. Earlier, the Gothenburg strain, associated with the Glaxo strain, was used. It is unlikely that the change in strain is responsible for our findings. Shirakawa et al. (5) have reported that

positive tuberculin responses among BCG-vaccinated schoolchildren in Japan correlated with a lower incidence of atopic disorders. Children with florid tuberculin responses (>40 mm skin induration) had a major impact on this inverse correlation. Natural exposure to mycobacteria (the incidence of tuberculosis is about 10 times higher in Japan than in Sweden) but also a predisposition in subjects to a Th1 response may have implications for the interpretation of their results. Thus, the role of exposure to *Mycobacterium tuberculosis*, of differences in BCG strains, and of the genetic constitution of the individual in modulating the immune response in a nonatopic direction has to be further studied.

References

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