BCG vaccination of infants confers Mycobacterium tuberculosis strain-specific immune responses to leucocytes

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October 6, 2020

Abstract

The efficacy of bacille Calmette-Guerin (BCG) vaccination against tuberculosis is highly variable, and protective immunity elicited by BCG is poorly understood. We compared the cytokine/chemokine profiles of peripheral blood mononuclear cells (PBMC) obtained from infants BCG-vaccinated at birth and from non-vaccinated infants. The PBMC from 10-week old BCG-vaccinated infants released higher levels of pro-inflammatory molecules than PBMCs from the non-vaccinated counterpart. In vitro exposure of PBMCs from BCG-vaccinated infants, to two different Mycobacterium tuberculosis strains, showed distinct pro- and anti-inflammatory patterns. Thus, BCG-induced infant immune responses and their protective ability may be shaped by the nature of the infecting Mtb strain.

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