

Childhood infectious diseases and risk of leukaemia in an adult population.

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Abstract

Our study is aimed at investigating the association between common childhood infectious diseases (measles, chickenpox, rubella, mumps and pertussis) and the risk of developing leukaemia in an adult population. A reanalysis of a large population-based case-control study was carried out. Original data included 1,771 controls and 649 leukaemia cases from 11 Italian areas. To contain recall bias, the analysis was restricted to subjects directly interviewed and with a good quality interview (1,165 controls and 312 cases). Odds ratios (ORs) and their related 95% confidence intervals (95% CIs) were estimated by unconditional polychotomous logistic regression model adjusting for age, gender and occupational and lifestyle exposures. A protective effect of at least one infection (OR = 0.66, 95% CI: 0.45-0.97), measles (OR = 0.57, 95% CI: 0.39-0.82) and pertussis (OR = 0.66, 95% CI: 0.45-0.98) was observed for chronic lymphoid leukaemia (CLL). The number of infections was strongly inversely associated with the risk of CLL ($p = 0.002$, test for trend). With regard to the other types of leukaemia, only a protective effect of pertussis was observed for AML (OR = 0.52, 95% CI: 0.32-0.87). Our results pointed out a protective role of childhood infectious diseases on the risk of CLL in adults. Although a specific antioncogenic effect of some infectious disease, especially measles, cannot be ruled out, the observed decrease of risk with increasing number of infections suggests that a more general "hygiene hypothesis" could be the most likely explanation of the detected association. The protective role of pertussis remains to be elucidated.