

## Cytomegalovirus infection and development of allergic diseases in early childhood: Interaction with EBV infection?

Anna Sidorchuk, MD <sup>a c</sup> [MEDLINE LOOKUP]

Magnus Wickman, MD, PhD <sup>a d</sup> [MEDLINE LOOKUP]

Göran Pershagen, MD, PhD <sup>a d</sup> [MEDLINE LOOKUP]

Frédéric Lagarde, PhD <sup>a</sup> [MEDLINE LOOKUP]

Annika Linde, MD, PhD <sup>b \*</sup> [MEDLINE LOOKUP]

**Background** Chronic replication of cytomegalovirus and EBV in early life may affect the immune system and play a role in the development of allergy in children.

**Objective** To assess the relation between cytomegalovirus infection and allergic disorders in children, including a possible interaction with EBV infection.

**Methods** From a prospective birth cohort study in Stockholm, on factors of importance for development of allergy, 2581 four-year-old children were enrolled. The classification of allergic diseases was based on questionnaire answers and determination of IgE antibodies to common airborne and food allergens. IgG to cytomegalovirus was determined by a commercial ELISA and to EBV by indirect immunofluorescence.

**Results** A total of 1191 (46%) children were cytomegalovirus-seropositive. There were no significant associations between seropositivity to cytomegalovirus and allergic manifestations, such as bronchial asthma, suspected allergic rhinitis, or atopic dermatitis. Seropositivity to cytomegalovirus alone, ie, without seropositivity to EBV, was related to IgE antibodies to airborne and food allergens (adjusted odds ratio, 1.8; 95% CI, 1.2-2.9). An antagonism between cytomegalovirus and EBV in relation to sensitization to airborne and food allergens was suggested ( $P=.05$ ).

**Conclusion** The study does not support the hypothesis that previous cytomegalovirus infection plays an important role in the pathogenesis of bronchial asthma, suspected allergic rhinitis, or atopic dermatitis in children. However, in the absence of EBV infection, cytomegalovirus infection may be related to sensitization to airborne and food allergens.

### Publishing and Reprint Information

- <sup>a</sup>From the Department of Environmental Epidemiology, Institute of Environmental Medicine, and
- <sup>b</sup>the Department of Virology, Swedish Institute for Infectious Diseases Control and Microbiology and Tumorbiology Center, Karolinska Institute, Stockholm;
- <sup>c</sup>the Department of Epidemiology, Mechnikov State Medical Academy, St Petersburg; and
- <sup>d</sup>the Department of Occupational and Environmental Health, Stockholm County Council, Stockholm.
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- \*Reprint requests: Annika Linde, MD, PhD, Department of Virology, Swedish Institute for Infectious Diseases Control and Microbiology and Tumorbiology Center, Karolinska Institute, Solna SE-171 82, Sweden.
- Email address: [annika.linde@smi.ki.se](mailto:annika.linde@smi.ki.se) (Annika Linde)
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