Not all animals are equal - farm living and allergy in Upper Bavaria

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Abstract

Background: A lower allergy and asthma prevalence in farm children has been described three decades ago in Switzerland. After years of research into bacterial exposure at farms, the origin of the farm effect is unknown. It could be still the effect of a sampling bias. As there was never any effect in large industrial cattle farms with slatted floors, we now hypothesize that in small farms, where animals are grazing outdoors, children may be exposed to animals with a higher endoparasite load. Methods: We re-analyze an earlier epidemiological study by record-linkage to later agricultural surveys. The Asthma and Allergy Study in 1989/90 was a cross-sectional study of 1714 ten year old children in 63 villages covering ten different districts of Upper Bavaria. The farm effect is defined here as the association of number of cows per villager on lifetime prevalence of allergic rhinitis prevalence in the children. Results: The farm effect is restricted to small villages only. Furthermore, districts with a higher Fasciola infection rates of cows, show a stronger farm effect than districts with lower infection rates. Conclusions: Research into parasite effector molecules is warranted.

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