LETTER TO EDITOR

Pathogens being replaced with allergens or immunogens: a theoretical perspective

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Letter

In a recent article, Silverberg et al (1) reinstated the skewed epidemiology of allergic diseases across the continents by documenting in their study that compared to children born in United States, foreign-born children have significantly low incidence of allergic diseases; however this favorable allergic disease profile among children born outside United States is lost after living in United States for a decade and over. Though these results bring to attention the hygiene hypothesis (2-4) as the underlying mechanism, it is important to realize how the hygiene hypothesis evolves into this observed transcontinental skew. First of all, the human cells have evolved to counter biological pathogens wherein sometimes these cells fail to adequately counter these pathogens resulting in self-limiting diseases or complicated illnesses. Secondly, these same human cells become confused when dealing with the abundance of chemical "pathogens" (allergens or immunogens) because the cidal (killer) activity that is stimulated by living biological pathogens to eventually annihilate the inciting stimulants, cannot direct its killing power to non-living chemical "pathogens". Therefore, this induced-killing power is often misdirected to the invaded human body itself resulting in allergy or auto-immunity. This does not mean that we should revert back to pre-hygiene era with rampant epidemics caused by the biological pathogens. However, the community at large should be aware of the concerns related to non-living chemical "pathogens". For example, when an overly cautious mother cleans her hands with waterless hand rinses before feeding her children, she may be eliminating her kids' exposure to the biological agents, but in the process, she may be exposing her kids to the molecules of chemicals transferred from her hands. These chemical pathogens, in spite of being miniscule to the naked eyes, may have adequate potential to induce cidal activity in the exposed kids leading to allergenicity, immunogenicity and possibly eventual auto-immunity in them. Cleanliness is the answer for better survival and longevity of human populations but it is not clear whether

replacing biological agents with chemical agents serves this purpose appropriately or perfectly. In summary, the world may never be perfect and the world may not be able to undo societal evolutions; but understanding the inherent imperfections and the consequences of evolutions may guide the improvements in human survival a tidbit better and a tidbit longer at a single historical time-point.

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