
Life in harmony: The balancing role of the immune system

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Abstract

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ABSTRACT: Throughout the history of immunology there have been two distinct ways of understanding the immune system function. One originating from Darwinian natural selection according to which, the immune system is a guardian of the organism's autonomy ready to recognize and fight any foreign invader and the other one, rooted in Lamarckian ideas, according to which the immune system is a peace-maker, a mediator striving for harmony and cooperation. The first view paved the way for the current paradigm of self/nonself discrimination in immunology. The second view, inspired by Lamarck, helped to shape the idea of immune balance, which despite its presence in immunology since its inception has never become a part of the mainstream model. This paper will examine the development of the idea of immune balance and the related concepts of immune harmony and equilibrium to evaluate their potential to inform a future paradigm able to address the shortcomings of the classical self/nonself discrimination model. I will suggest that in the face of the current self/nonself paradigm crisis, immunologists should turn to the idea of the immune system as primarily engaged in counterbalancing the effects of the fluctuations in the microbial, chemical and self-induced environment to promote adaptation and well-being of the genetically defined organism.

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