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Differences between immune response from young and elderly people: Is immunosenescence a deterioration of the immune system?

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Neutrophils are the most abundant cell type involved in the innate immune response. They are rapidly recruited to sites of injury or infection where they engulf and kill invading microorganisms. Neutrophils also have immunomodulatory function and they are involved with immune response in the cancer and autoimmune events. During the immunosenescence, neutrophils demonstrate several changes as phenotypic and functional alterations. Although many research have been developed, the pattern of neutrophils' response developed after inflammatory and microbial stimuli in the immunosenescence remains to be clarified. Our research has analyzed the profile of human and murine neutrophils from elderly and young individuals after activation with recombinant cytokines with known activation function in these cells. Expression of toll-like and IgG (CD16, CD32 and CD64) receptors, phagocytic activity, cytokine production and antimicrobial mechanisms have been evaluated. Our data show differences about neutrophils in the immunosenescence but they not necessarily demonstrate total deterioration of the immune defense.

Biography

Thais Helena Gasparato has investigated innate immune response against *Candida albicans since* 2001. In her master's, she detected apoptosis of phagocytic cells induced by C. *albicans* isolated from HIV+, but not HIV-, patients. Upon completion of her PhD in oral biology at the University of São Paulo in 2009 she demonstrated that salivary and blood neutrophils from elderly individuals. Also, she has investigated the influence of immune mechanisms in the establishment and persistence of different oral diseases. The group of research that she contributes has generated data directing other investigations. In a Postdoctoral program, she investigated inflammasome and its role in cancer. Concurrently, she has studied Immunosenescence, neutrophils and immune response against *Candida albicans* since 2004. In the present Postdoctoral (PNPD Capes), she has investigated the role of cytokines in the immune mechanisms in the immunosenescence.

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