

Neutrophils - Innate immunity

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Neutrophils are pivotal effector cells of innate immunity representing the first line of defense against aggression. They are the first cells to arrive at the site of the aggression, where they can directly eliminate the invading microorganisms. Their activation and recruitment into peripheral tissues is indispensable for host defense. They recognize antigens through membrane receptors which are expressed during their maturation and activation. With aging, there are alterations of the receptor by driven functions of human neutrophils as a decrease in the functional changes in signaling elicited by specific receptors. The analysis of CXCL8 cultivated-neutrophils showed elastase (ELA) secretion, but neither myeloperoxidase (MPO) activity nor production of IL-6, IL-10, GM-CSF by neutrophils from elderly compared with young individuals. Differences were detected when neutrophils from elderly were cultivated in the presence of only LPS or LPS plus CXCL8. Data also showed significant decreasing of CD16⁺ and CD64⁺ neutrophils from elderly when compared with young humans. CD32⁺ neutrophils were increased when compared with young group. These data indicate that elderly neutrophils are able to activate and respond to antigens. However, CD16 and CD64 expression is neglected on neutrophils and it might contribute to immunosenescence markers.

Biography

Thais Helena Gasparoto completed her PhD in oral biology at the University of São Paulo in 2009. She demonstrated that salivary and blood neutrophils from elderly individuals present functional and phenotypic damages that could be related to their susceptibility to infections. Also, she has investigated the influence of immune mechanisms in the establishment and persistence of different oral diseases, like Candida-related denture stomatitis, periodontal diseases, and oral epithelial squamous cell carcinoma. These investigations resulted in several relevant papers. 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, Gasparoto has studied Immunosenescence, neutrophils and immune response against *Candida albicans* since 2004.

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