Impact of macrophages on lymphoid neogenesis in CNS inflammation

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Tertiary lymphoid organs (TLO) appear at sides of chronic inflammation and show similar cellular compartmentalization as secondary lymphoid tissues. Although different lymphocytes and molecules contribute to tertiary lymphoid organogenesis the role of macrophage in this process, as well as their interaction with B cells at these sites of inflammation remains to be elucidated. Previous data showed the importance of CD169+ macrophages in secondary lymphoid organs, in antigen presentation and B cell activation. Here we investigate the impact of CD169+ macrophages in the pathogenesis of multiple sclerosis-like mouse models, which are characterized by an inflammation of the central nervous system (CNS), induced by autoimmunity. Using mice in a chronic and acute state of CNS inflammation, we could see that different TLO-resident cell populations infiltrate the CNS, as well as CD169+ macrophages, suggesting a contribution of these cells to lymphoid neogenesis. Our data further show the implication of CD169+ macrophages in the pathogenesis of multiple sclerosis. Using a mouse model of induced macrophage depletion we investigate their role in the formation and functionality of TLO associated to CNS inflammation. Our future perspective includes exploring the interactions of macrophages with other cell types during CNS inflammation.

Keywords : lymphoid neogenesis, CNS inflammation, macrophage, CD169
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