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Different distribution patterns of lymphocytes and microglia in the hippocampus of patients with residual versus paranoid schizophrenia: further evidence for disease course-related immune alterations?

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Based on the neuroinflammatory hypothesis of schizophrenia, we have quantified the numerical density of immunostained CD3+ T-lymphocytes, CD20+ B-lymphocytes, and HLA-DR+ microglial cells in the posterior hippocampus of 17 schizophrenia patients and 11 matched controls. Disease course-related immune alterations were considered by a separate analysis of residual (prevailing negative symptoms, n=7) and paranoid (prominent positive symptoms, n=10) schizophrenia cases. Higher lymphocyte densities were observed in residual schizophrenia. In contrast, HLA-DR+ microglia were increased in paranoid schizophrenia. BBB impairment and infiltration of T cells and B cells may contribute to the pathophysiology of residual schizophrenia, while microglial activation seems to play a role in paranoid schizophrenia. The identification of diverse immune endophenotypes may facilitate the development of distinct anti-inflammatory schizophrenia therapies to normalize BBB function, (auto)antibody production or microglial activity.

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