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Epstein-Barr virus and Multiple Sclerosis: Is there a link?

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Multiple sclerosis (MS) is a chronic inflammatory disease of the central nervous system, believed to be caused by the autoimmune destruction of myelin sheath surrounding the nerve fibres of the brain and spinal cord, leading to demyelination and scarring. The disease is amongst the leading causes of neurological disability. However, little is known regarding its etiology or the mechanisms that drive the chronic inflammation which leads to the autoimmune destruction of the myelin sheath. Both genetic and environmental factors have been implicated. Of the environmental factors, Epstein-Barr virus (EBV) has received considerable attention in recent years. A number of studies have shown elevated levels of EBV-specific immune responses in patients MS, both pre- and post onset of the disease. More recently, EBV-infected cells were reported to be present in white matter lesions in MS tissues, however other studies could not confirm this finding. Our recent work has shown the presence of EBV-infected cells in preselected active MS lesions. Interestingly, the distribution of EBV-infected cells correlated with the distribution of IFN α -expressing cells. We further showed that this proinflammatory cytokine was expressed in macrophages and microglia in MS lesions and that EBV can trigger IFN α expression in an *in vitro* model. However, what role EBV plays in the disease process is not clear. Here, we discuss some potential roles this virus could play in the pathogenesis of MS.

Biography

Dr Khan is an Associate Professor of Viral Pathology in the Faculty of Medicine, UAEU. He has a PhD in Viral Pathology from the University of London. He did his post-doctoral training in Boston, USA and Glasgow, UK. His main research interest is in the biology of EBV and its role in human diseases, and he has published numerous papers in this field.