

Poster presentation

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Effect of CCR5 receptor antagonist (MET-RANTES) on leukocyte-endothelium interactions in an experimental model of herpetic encephalitis

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Background

The Herpes Simplex Virus-1 (HSV-1) is responsible for several clinical manifestations in humans, including severe encephalitis. The aim of this study was to use Met-RANTES, a CCR1 and CCR5 antagonist, in the treatment of a severe model of HSV-1 encephalitis.

Methods

Wild type C57BL/6 mice were intracerebrally inoculated with 10⁴ PFU of HSV-1 or PBS. Mice received Met-RANTES (10 µg/mice) subcutaneously on days -1, 0, 1, 2 and 3. Visualization of leukocyte recruitment using intravital microscopy was done at 1 and 3 days post-infection (dpi). The brain was removed for chemokine analysis by ELISA. Virus titration in cerebral tissue was done by TCID₅₀.

Results

Met-RANTES does not alter significantly virus titers at 1 dpi and 3 dpi after intracerebral injection of HSV-1. This treatment decreased leukocyte adhesion of microvasculature in C57BL/6 infected mice at 1 and 3 dpi. Treatment was also followed by a significant increase in chemokine

levels, including CCL3, CCL5, CXCL1 and CXCL9, at 3 dpi.

Conclusion

CCL5/RANTES, a chemokine that binds to CCR1 and CCR5, seems to be relevant in the recruitment of leukocytes in an experimental model of severe HSV-1 encephalitis. However blocking of CCR1 and CCR5 does not affect HSV-1 replication, suggesting that other immune mechanisms are involved in this process.