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Systemic and local cytokine profile following spinal cord injury in rats: A multiplex analysis

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Abstract

© 2017 Mukhamedshina, Akhmetzyanova, Martynova, Khaiboullina, Galieva and Rizvanov. Our study of the changes in cytokine profile in blood serum and in the spinal cord after traumatic spinal cord injury (SCI) has shown that an inflammatory reaction and immunological response are not limited to the CNS, but widespread. This fact was confirmed by changes detected in a cytokine profile in blood serum samples [MIP-1 α , interleukin 1 (IL-1) α , IL-2, IL-5, IL-1 β , MCP-1, RANTES]. There were also changes in the levels of MIP-1 α , IL-1 α , IL-2, IL-5, IL-18, GM-colon-stimulating factor, IL-17 α , IFN- γ , IL-10, IL-13, MCP-1, and GRO KC CINC-1 in samples of the rat injured spinal cord. The results underscore the complex cytokine network imbalance exhibited after SCI and show significant changes in the concentrations of 14 cytokines/chemokines with different inflammatory and immunological activities.

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Keywords

Acute and subacute periods, Cytokine profile, Multiplex analysis, Rats, Spinal cord injury

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