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Changes in cerebrospinal fluid levels of pro-inflammatory cytokines in CRPS.

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Abstract

Complex Regional Pain Syndrome (CRPS) Types I and II are characterized by various combinations of sensory, autonomic and motor abnormalities. Pain disproportionate to the severity and duration of the inciting event is the most devastating symptom. In animal studies, conditions resulting in exaggerated pain states demonstrate elevated pro-inflammatory cytokines. In addition, pro-inflammatory cytokines have been shown to induce or increase neuropathic and inflammatory pain. Utilizing high sensitivity enzyme linked immunosorbent assay (ELISA), we compared the levels of the pro-inflammatory cytokines interleukin-1beta (IL-1beta), interleukin-6 (IL-6) and Tumor Necrosis Factor-alpha (TNF-alpha) in the cerebrospinal fluid (CSF) of patients afflicted with CRPS to CSF levels found in other patients with and without painful conditions. The results from this study demonstrated significant increases in IL-1beta and IL-6, but not TNF-alpha in the CSF of individuals afflicted with CRPS as compared to controls. CSF cytokine levels in controls with painful conditions did not differ from levels in controls without pain. These increases showed no correlation with the patient's gender or weight. These results are consistent with studies that suggest that the pathogenesis of CRPS is due in part to central neuroimmune activation.

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