Increased Proinflammatory Cytokine Levels in Prolonged Arthralgia in Ross River Virus Infection

Technical Appendix

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Technical Appendix Figure 1. Changes in cytokine, chemokine, and growth factor levels in the acute and prolonged arthralgia (convalescent) phase of Ross River virus infection. A) Serum levels of IL-4, IL-7 and GM-CSF were elevated during the acute phase of the infection, whereas IL-1β, IL-4, IL-6, IL-8, IL-9, IL-13, IL-15, and GM-CSF demonstrated notable increases during the prolonged arthralgic convalescent phase when compared with healthy controls. B) Increased serum concentrations of RANTES, IP-10, and VEGF during the acute phase, with decreased eotaxin levels at that time. Concentrations of IFN-γ, TNF-α, RANTES, bFGF, MIP1α (but not MIP1β), and VEGF were elevated in the arthralgic convalescent phase when compared with healthy controls. IP-10, bFGF, and MIP1α concentrations also showed changes in the convalescent phase when compared with the acute phase. *p<0.05, †p<0.01, acute-phase or convalescent-phase serum versus healthy controls; ‡p<0.05, §p<0.01 convalescent-phase versus acute-phase serum (by Kruskal-Wallis test). bFGF, basic fibroblast growth factor; IFN, interferon; IP, interferon-γ-induced protein; MIP, macrophage inflammatory protein; RANTES, regulated on activation, normal T cell expressed and secreted; TNF, tumor necrosis factor; VEGF, vascular endothelial growth factor.
Technical Appendix Figure 2. Serum cytokine, chemokine, and growth factor level changes in 2 individual patients over time. In the 2 patients depicted, several parameters were lower in the convalescent phase than in the acute phase.