Cytokine signature in chronic fatigue syndrome

Megan E. Roerink, Matthew Buckland, Andrew R. Lloyd, and Jos W. M. van der Meer

One of the major findings in the publication by Montoya et al. (1) on cytokine signatures in chronic fatigue syndrome is elevation of circulating TGF-β in patients with chronic fatigue syndrome (CFS). Unfortunately, the materials and methods of ref. 1 do not give much information on how the controls were recruited, and how the blood samples of patients and controls were obtained and processed, which is essential when measuring inflammatory protein.

Especially for TGF-β, this is of critical importance to avoid spurious results. The major pitfall here is contamination of the plasma by platelet-derived TGF-β. In an otherwise carefully controlled study of patients with CFS, we found that the use of two centrifuges with a different g-force (at the same centrifugation speed) led to markedly different TGF-β values, reflected by differences in the platelet marker, P-selectin, which showed a strong correlation with TGF-β. In another carefully controlled study, differences in the duration of centrifugation as executed by two technicians turned out to be the explanation for high TGF-β concentrations in the plasma of patients with CFS (2). Ultimately, it was resolved that TGF-β concentrations did not differ between patients and control subjects in either study. We recommend that Montoya et al. (1) measure the platelet marker P-selectin in their samples to assess whether platelet contamination could be responsible for their findings, and to measure TGF-β concentrations using alternative immunoassays to provide better insight into the biological meaning of the reported results.