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*Kenny L De Meirleir*

University of Nevada, USA

Biomarkers which identify CFS/ME patients

The goal of our study was to assemble a panel of immune and inflammatory markers, which would accurately identify chronic fatigue syndrome (CFS)/myalgic encephalomyelitis (ME) cases. Four markers were initially investigated to establish differences between CFS/ME 140 cases and 140 controls. Serum interleukin 8 (IL-8), soluble CD14 (sCD14, a surrogate marker for bacterial lipopolysaccharides (LPS)), and prostaglandin E2 (PGE2) were measured for all subjects as were absolute CD57+ lymphocytes. Median values for all analyzed parameters were established; independent sample t-test, Mann-Whitney test and ROC curve analysis were used to investigate difference linked to gender and age. ROC statistics revealed a significant difference between CFS/ME cases and controls ($p < 0.001$) for all parameters separately, both in the male and female cohorts. Both sensitivity and specificity were high. Logistic regression analysis for the combination of parameters was correctly predicted in 89% of male CFS/ME cases and in 97% of female CFS/ME cases. This panel differentiates CFS/ME cases from controls with high sensitivity and specificity and therefore represents a potential tool in selecting CFS/ME subjects for clinical studies. Each of these four biological markers relate strongly to the disorder. PGE2 activates dendritic cells and suppresses their ability to attract T cells. PGE2 additionally promotes Th2, Th17 and Tregs and also modulates chemokine production (e.g. IL-8). Our data suggest that LPS, likely from gut bacteria, plays an important role in the pathophysiology of CFS/ME. Subsequent markers will be required to subcategorize CFS/ME subjects in order to tailor therapeutic solutions.

Biography

Kenny L De Meirleir is an Emeritus Professor in Physiology, Pathophysiology and Medicine. He has examined, diagnosed and treated almost 20,000 ME/CFS patients in all 5 continents of the world. Currently his scientific and medical practices are situated in Belgium at Himmunitas and the Nevada Center for Biomedical Research at the University of Nevada (USA).

de.meirleir@telenet.be