

Abstract

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Increased serum IgM antibodies directed against phosphatidyl inositol (Pi) in chronic fatigue syndrome (CFS) and major depression: evidence that an IgM-mediated immune response against Pi is one factor underpinning the comorbidity between both CFS and depression.

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BACKGROUND: Major depression and chronic fatigue syndrome (CFS) are accompanied by signs of oxidative and nitrosative stress (O&NS) and an inflammatory response. Phosphatidyl inositol (Pi) is thought to play a role in depression.

OBJECTIVE: The aim of the present study is to examine whether depression and CFS are characterized by an IgM-mediated immune response directed against Pi.

METHODS: Toward this end, this study examines the serum IgM antibodies directed against Pi in 14 patients with major depression, 14 patients with CFS, 14 subjects with partial CFS, and in 11 normal controls.

RESULTS: We found that the prevalence and mean value for the serum IgM levels directed against Pi were significantly greater in patients with major depression and CFS than in normal controls and patients with partial CFS. There were significant and positive correlations between serum IgM levels directed against Pi and two symptoms of the FibroFatigue Scale, i.e. fatigue and depression. The results show that an IgM-related immune response directed against Pi may occur in both depression and CFS and may play a role in the pathophysiology of the key symptom of CFS and major depression. It is suggested that the above disorders in Pi result from increased O&NS in both depression and CFS. Autoanti-Pi antibodies may have biological effects, for example, by changing inositol 1,4,5-triphosphate (IP3), phosphatidylinositol-4,5-bisphosphate (PIP2), diacylglycerol and phosphatidylinositol-3,4,5-triphosphate (PIP3) production, thus interfering with intracellular signalling processes.

CONCLUSION: Future research in major depression and CFS should focus on the functional consequences of the immune responses directed against Pi.

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