Assessment of regional cerebral perfusion by 99Tcm-HMPAO SPECT in chronic fatigue syndrome.

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Chronic fatigue syndrome (CFS) is a severely disabling illness of uncertain aetiology. It is characterized by a chronic, sustained or fluctuating sense of debilitating fatigue without any other known underlying medical conditions. It is also associated with both somatic and neuropsychological symptoms. Both physical and laboratory findings are usually unremarkable. Regional cerebral blood flow (rCBF) was assessed in 60 clinically defined CFS patients and 14 normal control (NC) subjects using 99Tcm-hexamethylpropyleneamine oxime (99Tcm-HMPAO) single photon emission computed tomography (SPECT). Compared with the NC group, the CFS group showed significantly lower cortical/cerebellar rCBF ratios, throughout multiple brain regions ($P < 0.05$). Forty-eight CFS subjects (80%) showed at least one or more rCBF ratios significantly less than normal values. The major cerebral regions involved were frontal (38 cases, 63%), temporal (21 cases, 35%), parietal (32 cases, 53%) and occipital lobes (23 cases, 38%). The rCBF ratios of basal ganglia (24 cases, 40%) were also reduced. 99Tcm-HMPAO brain SPECT provided objective evidence for functional impairment of the brain in the majority of the CFS subjects. The findings may not be diagnostic of CFS but 99Tcm-HMPAO SPECT may play an important role in clarifying the pathoaetiology of CFS. Further studies are warranted.

PMID: 1491843 [PubMed - indexed for MEDLINE]