Neuropsychological and positron emission tomography correlates in idiopathic environmental intolerances.

OBJECTIVES: It has been hypothesized that people with subjective hypersensitivity to chemicals may indeed suffer from neuronal damage due to widely distributed environmental toxins and that such deficits of diagnostic importance can be demonstrated with the help of functional neuroimaging even in single cases. In this study, a small group of well-characterized patients with idiopathic environmental intolerance were examined in order to identify such changes. METHODS: Twelve patients with idiopathic environmental intolerance were investigated neuropsychologically and underwent cerebral F-18 fluorodeoxyglucose (F-18 FDG) positron emission tomography (PET). The imaging results were compared with findings from 17 healthy controls. RESULTS: Six patients showed deficits in verbal learning and memory, three of them also had a reduced information processing speed. In the individual analyses, 11 patients showed normal cerebral glucose metabolism. In the group analysis of the patients, no areas with significantly reduced glucose metabolism could be found. CONCLUSIONS: No consistent pathological cognitive performance and functional imaging pattern was found. It appears premature to claim specific neuropsychological or neuroimaging findings characteristic of idiopathic environmental intolerance. Therefore cerebral F-18 FDG PET
should not be used to corroborate or rule out suspected idiopathic environmental intolerance, a syndrome whose potential biological underpinnings still need to be clarified.